

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application of)	
Black Hills/Kansas Gas Utility)	Docket No.
Company, LLC, d/b/a Black Hills)	21-BHCG-418-RTS
Energy, for approval of the Commission)	
to Make Certain Changes in its Rates)	
for Natural Gas Service)	

DIRECT TESTIMONY

PREPARED BY

Adam H. Gatewood

UTILITIES DIVISION

KANSAS CORPORATION COMMISSION

September 10, 2021

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1 **Q. Would you please state your name and business address?**

2 A. My name is Adam H. Gatewood. My business address is 1500 Southwest Arrowhead
3 Road, Topeka, Kansas, 66604.

4 **Q. Who is your employer and what is your title?**

1 A. I am employed in the Utilities Division of the Kansas Corporation Commission as a
2 Senior Managing Financial Analyst.

3 **Q. What is your educational and professional background?**

4 A. I graduated from Washburn University with a B.A. in Economics and a Masters of
5 Business Administration. I have filed testimony on cost of capital and related financial
6 issues before the Commission in more than 130 proceedings. I have also filed
7 testimony on cost of capital issues before the Federal Energy Regulatory Commission
8 (FERC) in natural gas pipeline and electric transmission dockets.

9 **Q. What issues are you testifying to in this Docket?**

10 A. I am testifying to the rate of return used to calculate **Black Hills/Kansas Gas Utility**
11 **Company, LLC, d/b/a Black Hills Energy (Black Hills)** revenue requirement. Black
12 Hills is an operating unit of **Black Hills Corporation (BHC)**.

13 **Q. Are you sponsoring any adjustments?**

14 A. Yes, I sponsor an adjustment to the capital structure, CS-1 as well as changes to the
15 cost of debt and cost of equity both of which appear in Staff's Schedule C.

1 **Q. Are you sponsoring any schedules?**

2 A. Yes, I sponsor the following schedules that are attached to this testimony.

3	Schedule AHG-1 Comparison of Staff's Recommendations in Gas LDC Rate Cases Schedule AHG-2 Data Request Response of Black Hills on Consolidated Capitalization (KCC DR 181 & 182) Schedule AHG-3 Staff Proxy Group Selection Process Schedule AHG-4 Value-Line Investment Survey Reports Schedule AHG-5 Stock Prices Used in Staff's Discounted Cash Flow Analysis Schedule AHG-6 Staff's Internal Rate of Return Analysis
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4 **Q. Did you prepare tables as part of your testimony?**

5 A. Yes, I prepared the following tables as part of my analysis.

6	pages 4 & 26 Staff's Proposed Rate of Return pages 4 & 27 Black Hills' Requested Rate of Return pages 5 & 27 Staff's Calculation of Black Hills Effective 11.23% Return on Equity pages 7 & 32 Staff's Corrections to Black Hills ROE Calculations in Exhibit AMM-2 pages 8 & 45 Summary of Staff's Cost of Equity Estimates pages 9 & 46 Commission Determined Allowed ROEs & Resulting Risk Premiums pages 11 - 12 Total Returns Experienced by Black Hills Corp and Staff Proxy Group page 29 Black Hills Corp. Equity Ratio 2011 - 2020 Highlighting SourceGas Acquisition pages 46 & 47 Median Allowed Returns & Baa Corporate Bond Yields page 49 Risk Premium Over Fixed Income Yields Based on a 9.20% ROE page 54 Risk Profile Comparison of Proxy Group Members page 59 Dividend Yields of Staff Proxy Group page 67 Staff's Nominal GDP Estimates page 68 Staff's Discounted Cash Flow Analysis page 69 Historic and Projected Growth Rates for Staff's Proxy Group page 70 Results of Staff's Internal Rate of Return Analysis page 75 Beta Coefficients of Proxy Group pages 78-82 Staff's Capital Asset Pricing Models
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Executive Summary

7 **Q. Please summarize your findings.**

- 1 A. I recommend that the Commission adopt a rate of return (ROR) of 6.25% for Black
 2 Hills, which incorporates 9.20% return on equity (ROE) with an ROE range of 8.70%
 3 to 9.70%. The following table summarizes my recommended ROR and the
 4 components of the calculation.

Staff Proposed Rate of Return for Black Hills Based on Consolidated Capital Structure and Consolidated Cost of Debt for Black Hills Corporation at June 30 2021			
	Weight	Cost	Weighted Cost
Long-term Debt	57.04%	4.03%	2.30%
Common Equity	42.96%	9.20%	3.95%
			6.25%
Sources: Responses to KCC DR 181 & 182			

- 5
 6 This compares to Black Hills' filed position of a 7.05% ROR shown in the following
 7 table.

Black Hills/Kansas Gas Utility Co. LLC Rate of Return in Section 7 of Application Test Year Ended December 31, 2020			
	Weight	Cost	Weighted Cost
Long-term Debt	49.66%	3.91%	1.94%
Common Equity	50.34%	10.15%	5.11%
			7.05%
Source: 21-BHCG-418-RTS, Section 7			

- 8
 9 **Q. Please summarize the causes for the difference in positions on Black Hills' ROR?**

- 10 A. Staff disagrees with Black Hills' proposed capital structure and ROE as each of these

1 two inputs result in an ROR that is unjust and unreasonable. These two issues account
2 for approximately \$2.5 million of Black Hills requested rate increase in this docket.
3 Furthermore, these two inputs to the ROR are used to calculate the revenue requirement
4 in Black Hills' annual Gas Safety Reliability Surcharge (GSRS) filings and will impact
5 customers' increases each year.

6 Black Hills' filed position is based on an assigned or allocated capital structure by BHC
7 management, whereas Staff is relying on the actual capital structure of BHC. Black
8 Hills has been "assigned" or "allocated" significantly more equity capital than is
9 representative of BHC's consolidated capital structure. Since equity has a significantly
10 higher cost rate than debt, in addition to an income tax gross up that debt does not incur,
11 an artificially high equity ratio increases Black Hills' revenue requirement without
12 commensurate benefits to consumers. Staff's approach to this issue is consistent with
13 testimony filed in past gas, electric, and telephone rate cases and it has been accepted
14 by the Commission.

15 The additional revenue generated as a result of the inflated ROR is a return to
16 shareholders of BHC over and above the 10.15% it requested; by Staff's calculations,
17 effectively Black Hills is requesting a return on equity of 11.23%. Staff's analysis
18 demonstrates that the publicized requested ROE of 10.15% sought by Black Hills fails
19 to meet the doctrine established by the Courts decisions in *Federal Power Comm'n v.*
20 *Hope Natural Gas Co.*¹ (*Hope*) and *Bluefield Water Works & Improvement Co. v. Pub.*

¹ *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

1 *Svc. Comm'n of West Virginia*² (Bluefield), clearly the windfall to BHC shareholders
 2 caused by the assigned equity ratio exacerbates that failure. The Hope and Bluefield
 3 decisions are discussed in footnote 38 to my testimony.

Effective Return on Equity for BHC Shareholders Based on Black Hills Requested 7.05% ROR BHC's Consolidated Capital Structure and Staff's Tax Gross Up Factor					
		Weight	Cost	Weighted Cost	Weighted Cost With Tax Gross Up
Long-term Debt	3,530,216,000	57.04%	4.03%	2.30%	2.30%
Common Equity	\$ 2,659,040,000	42.96%	11.23%	4.82%	6.11%
	\$ 6,189,256,000	100.00%		7.12%	8.41%
Assumptions & Methodology:					
1) 8.41% ROR based on Section 7 grossed up for income tax costs					
2) Responses to KCC DR 181 & 182 used to determine Black Hills Corp consolidated capital structure and cost of debt					
3) 11.23% is the resulting ROE based on BHC's actual capitalization, BHC cost of debt, and revenue requirement based on filed ROR Section 7.					

4

5 Staff and Black Hills also disagree on the appropriate ROE. There are several issues
 6 at the heart of our differences in determining the appropriate allowed return. The
 7 primary issue is the forecasted growth rate for earnings that is a critical input to several
 8 of the financial models used to estimate Black Hills' ROE. A careful review of Mr.
 9 McKenzie's analyses reveals that he failed to include data that captures long-run
 10 expectations for earnings growth causing him to overstate the ROE necessary for Black
 11 Hills. As shown in the following table, his choice of inputs cause his analysis to
 12 overstate Black Hills' cost of equity by 78 to 363 basis points in his cost of equity
 13 formulas.

² *Bluefield Water Works & Improvement Co. v. Pub. Svc. Comm'n of West Virginia*, 262 U.S. 679 (1923).

Cost of Equity Summary of Results From Exhibit AMM-2 Corrected							
	Exhibit AMM-2		1	Corrections 2		Corrected Results from AMM-2	
	Average	Midpoint	Growth Rate	Small Cap Premium	Total	Average	Midpoint
DCF							
Value Line	10.55%	11.27%	-0.78%		-0.78%	9.77%	10.49%
IBES	8.38%	8.12%	-0.78%		-0.78%	7.60%	7.34%
Zacks	9.06%	8.61%	-0.78%		-0.78%	8.28%	7.83%
CAPM							
Current Bond Yield	11.64%	11.81%	-2.52%	-1.11%	-3.63%	8.01%	8.18%
Projected Bond Yield	11.76%	11.90%	-2.52%	-1.11%	-3.63%	8.13%	8.27%
Empirical CAPM							
Current Bond Yield	11.89%	12.00%	-2.52%	-1.11%	-3.63%	8.26%	8.37%
Projected Bond Yield	11.98%	12.07%	-2.52%	-1.11%	-3.63%	8.35%	8.44%
Corrections:							
1) Growth Rate: Reduction in Mr. McKenzie's average growth rate with inclusion of long-term forecasted nGDP growth							
2) Small Capitalization Premium: Removing small company risk premium from CAPM analyses							
3) Sum of correction in columns 1 and 2							

1

2 **Q. How did you arrive at the conclusion that 9.20% is a reasonable return on equity**
3 **for Black Hills?**

4 A. My recommendation and the range are based on measurements from the current capital
5 markets, and an evaluation of previous Commission decisions. To measure the current
6 capital markets, I relied on well accepted financial models and inputs to those models
7 that are consistent with those used in past rate cases before this Commission. The
8 results of my analysis are summarized in the following table.

Summary of Staff's Cost of Equity Estimates 21-BHCG-418-RTS			
Discounted Cash Flow Analyses	Mean	Low	High
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	9.04%	8.57%	9.51%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast	8.66%	7.66%	10.56%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1928 - 2020, Reported at Damodaran On-Line	Arithmetic	9.95%	11.56%
	Geometric	8.68%	9.89%
<u>Based on Forecasted Return Data Published</u>			
J.P. Morgan Asset Management (2021 edition)		6.35%	7.40%
BlackRock		6.25%	7.50%
Duff & Phelps Forecasted Risk Premium		6.90%	8.28%

1

2 An ROE estimate is a range, not a specific point. As a practical matter, it is necessary
3 to pick a specific point within that range of reasonable estimates so as to calculate a
4 revenue requirement. My range for Black Hills ROE is 8.70% to 9.70%, and I
5 recommend the revenue requirement calculation use 9.20%.

6 I did not apply a formula or simple average, instead I applied a holistic view of my
7 DCF, CAPM analyses, and observations of the capital markets. In addition, Staff
8 believes it is important that its recommendations embody consistency across rate cases
9 while still reflecting changes in global capital costs. Since the 2008 Financial Crisis,
10 jurisdictional utilities have had their ROEs set by the Commission that resulted in an
11 average risk premium over the reported yield of BBB/Baa rated public utility bonds³

³ Value-Line Investment Survey Selection and Opinion, Selected Yields; weekly reporting of yields on A/A and Baa/BBB rated public utility bonds.

1 of about 474 basis points, thus providing shareholders a return on the equity capital that
 2 is considerably greater than the required return on long-term debt of similarly situated
 3 utilities.

Commission Determined Allowed ROEs -- Kansas Utilities						
Company	Docket	Order Date	Requested ROE	Ordered ROE	Baa/BBB Utility Bond	Risk
					Yield	Premium
Atmos Energy Corp.	19-ATMG-525-RTS	2/24/2020	10.25%	9.10%	3.92%	5.18%
Kansas City Power & Light	15-KCPE-116-RTS	9/10/2015	10.30%	9.30%	4.80%	4.50%
Atmos Energy Corp.	14-ATMG-320-RTS	9/4/2014	10.53%	9.10%	4.45%	4.65%
Kansas City Power & Light	12-KCPE-764-RTS	12/13/2012	10.40%	9.50%	4.21%	5.29%
Kansas City Power & Light	10-KCPE-415-RTS	11/22/2010	10.75%	10.00%	5.94%	4.06%
Westar Energy Inc.	05-WSEE-981-RTS	12/28/2005	11.50%	10.00%		
Westar Energy Inc.	01-WSRE-436-RTS	7/25/2001	12.75%	11.02%		
Kansas Gas Service Co.	193,305-U	4/15/1996	12.00%	10.50%		
					Average	4.74%
Sources: S&P Capital IQ, reports on Kansas rate cases						
Value-Line Investment Survey, Selection and Opinion; Yields on Utility Bonds (25/30 year) Baa/BBB rated						

4

5 This risk premium benchmark recognizes the economic reality that the additional risks
 6 associated with equity capital means that stock holders demand a higher return than
 7 bondholders of the same utility. At the time that I prepared this analysis, a 9.20% ROE
 8 is a 605 basis point premium over the yield on BBB/Baa Utility Bonds; 126 basis points
 9 greater than the risk premium observed from past Commission actions.⁴

10 Furthermore, a 9.20% ROE for Black Hills offers a risk premium of 587 basis points
 11 over the return demanded by its longest term publicly traded debt of BHC; a risk
 12 premium that is greater than provided in previous five natural gas rate cases. Schedule
 13 AHG-1 provides a comparison between my findings in the 14-BHCG-502-RTS, 16-

⁴ 9.20% ROE – 3.15% Yield on Baa/BBB Utility Bond = 6.05%

1 ATMG-079-RTS, 16-KGSG-491-RTS, 18-KGSG-560-RTS Dockets, and 19-ATMG-
2 525-RTS and my analysis for this Docket.

Black Hills Corporation

3 **Q. Describe Black Hills.**

4 **A.**Black Hills serves 115,184 customers (103,000 residential, 10,658 commercial, and
5 1,378 industrial) in sixty communities in Kansas.⁵ It is an operating unit of BHC and
6 it is BHC that obtains all of the capital to finance Black Hills. BHC maintains an
7 “investment-grade” bond rating by S&P Global Rating (BBB+) and Moody’s Rating
8 Service (Baa2). The following commentary published by Standard & Poors
9 summarizes BHC’s assets and operations.

Black Hills Corporation, through its subsidiaries, operates as an electric and natural gas utility company in the United States. It operates through four segments: Electric Utilities, Gas Utilities, Power Generation, and Mining. The Electric Utilities segment generates, transmits, and distributes electricity to approximately 216,000 electric customers in Colorado, South Dakota, and Wyoming, as well as provides electrical system construction services to large industrial customers. This segment owns 992 megawatts of generation capacity and 8,892 miles of electric transmission and distribution lines. The Gas Utilities segment distributes natural gas to approximately 1,083,000 natural gas utility customers in Arkansas, Colorado, Iowa, Kansas, Nebraska, and Wyoming. It also provides appliance repair services to residential customers; and constructs and maintains gas infrastructure facilities for gas transportation customers. This segment owns and operates approximately 4,774 miles of intrastate gas transmission pipelines; 41,838 miles of gas distribution mains and service lines; seven natural gas storage sites; and approximately 49,000 horsepower of compression and 560 miles of gathering lines. The Power Generation segment produces electric power through wind, natural gas, and coal-fired generating plants; and sells the electric capacity and energy primarily to utilities under long-term contracts. The Mining segment produces coal at its coal mine located near Gillette, Wyoming; and sells the coal to electric generation facilities. Black Hills Corporation was incorporated in 1941 and is headquartered in Rapid City, South Dakota.⁶

10 Since Black Hills’ last rate case in Kansas BHC has reduced its exposure to oil and gas

⁵ Black Hills/Kansas Gas Utility Company, LLC d/b/a/ Black Hills Energy; Gas Utility Kansas Supplemental 2020 Annual Report to the State of Kansas.

⁶ S&P Capital IQ; Black Hills Corp
<https://www.capitaliq.spglobal.com/web/client?auth=inherit#company/profile?id=4010420>

1 exploration and production while acquiring additional natural gas distribution
 2 properties. With these changes BHC has become very close to a pure-play public utility
 3 company.

4 **Q. How has BHC performed as an investment?**

5 A. Over the short-term, since the COVID-19 Pandemic began in January of 2020, Black
 6 Hills Corporation has experienced a total return (price appreciation plus dividend
 7 payments) of negative 13%. An index of natural gas distribution utilities experienced
 8 a negative return of 12% while the S&P 500 Index had a gain of 41%. Generally,
 9 returns on utility stocks have lagged those of the broad market of the S&P 500 Index
 10 since the 2020 recession.

Total Return % (Price Change plus Dividends) Black Hills Corp, Staff 21-418 Proxy Group, S&P 500 Index and S&P 500 Index Gas Utilities January 31, 2020 through July 30, 2021			
	Total Return %		
	HIGH	LOW	CHANGE
Black Hills Corp.	3.66	(38.27)	(14.24)
S&P 500 Gas Utilities (Sub Ind) Index	3.02	(30.88)	(12.69)
S&P 500 Index	40.58	(30.40)	39.75
Atmos Energy	3.02	(30.88)	(12.69)
NiSource	3.80	(28.33)	(10.29)
Northwest Natural Gas	4.80	(40.60)	(24.68)
One Gas	2.32	(28.17)	(18.56)
South Jersey Industries	7.82	(37.85)	(12.34)
Spire, Inc.	3.89	(37.16)	(11.05)
Source: S&P Global Market Intelligence			

11

12 Over a longer time horizon, back to mid-2011, BHC's returns are comparable to those
 13 of other utilities in the proxy group.

**Total Return % (Price Change plus Dividends)
Black Hills Corp, Staff 21-418 Proxy Group,
S&P 500 Index and S&P 500 Index Gas Utilities
July 30, 2011 through July 30, 2021**

	Total Return %		
	HIGH	LOW	CHANGE
Black Hills Corp.	289.97	(9.06)	222.64
S&P 500 Gas Utilities (Sub Ind) Index	173.94	(85.56)	(81.76)
S&P 500 Index	332.15	(11.97)	329.60
Atmos Energy	356.49	(14.23)	286.87
NiSource	404.13	(10.44)	335.73
Northwest Natural Gas	134.58	(9.20)	68.59
One Gas	237.62	(2.57)	168.74
South Jersey Industries	86.24	(12.91)	45.34
Spire, Inc.	218.97	(9.09)	173.11
Source: S&P Global Market Intelligence			

1

2 **Q. How have BHC's earnings and dividends growth rates performed?**

3 A. Earnings and dividend growth, both historic and forecasted, are positive for BHC and
4 Staff's 21-418 Proxy Group. Over the past decade BHC's earnings grew at an annual
5 rate of 10% and dividends at 3.5% while over the past five years earnings grew at 5%
6 and dividends at 5.5%.⁷

7 **Q. Does BHC expect these growth rates to continue in the future?**

8 A. Yes, BHC has told investors to anticipate similar growth in its earnings and dividends
9 going forward. BHC management presented the following two slides in a presentation
10 to shareholders in May of 2021.⁸

⁷ Value-Line Investment Survey, Black Hills Corporation, April 23, 2021.

⁸ Black Hills Corporation Presentation to Shareholders, May 2021, https://s21.q4cdn.com/494657442/files/doc_events/2021/BKH-May-Investor-Presentation.pdf

Integrated Utility with Strong Growth Outlook

\$3+ billion

Capital Investment 2021-2025

- Incremental projects likely
- Additional growth opportunities

5% to 7%

Long-term EPS growth target¹

5%+

Annual dividend growth target²

50-60% payout target

- Integrated pure-play utility
- Diversified and complementary electric and gas mix
- Stable, growing and constructive service territories
- Strong financial position and liquidity
- Robust capital plan with timely recovery

¹ 2023 to 2025 compound annual growth rate, off 2022 base

² Future dividends subject to board approval

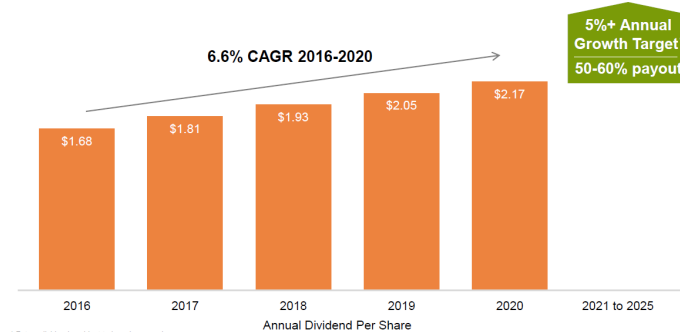
Black Hills Corporation

BKH Investor Presentation | May 2021 | 3

1

Strong Dividend Track Record

50 Consecutive Years of Annual Increases and 78 Consecutive Years Paid



Black Hills Corporation

BKH Investor Presentation | May 2021 | 23

2

Value-Line's forecasts for three to five year annual growth in BHC's earnings and dividends are comparable to management's guidance.

Q. Regarding BHC's May 2021 presentation to investors, in your review of that document did you find any additional information that could aid the Commission in making its decision?

A. Yes, a slide in the presentation summarizes the regulatory mechanisms that BHC has in place in each jurisdiction. Black Hills compares favorably to the other BHC business units. These regulatory mechanism serve to reduce regulatory lag and provide

1 stable cash flow to BHC, that is, stable as compared to operating without the regulatory
 2 mechanisms. Kansas has also provided Black Hills rate design polices with a higher
 3 percentage of fix cost recovery via its monthly fixed charge to customers. The
 4 regulatory mechanisms that Black Hills has been granted in Kansas are relevant to its
 5 risk and the Commission should consider Black Hill's use of these regulatory
 6 mechanisms when it determines its allowed return.

Optimizing Regulatory Recovery

Electric Utilities

	Environmental Cost	DSM/ Energy Efficiency	Transmission Expense	Fuel Cost	Transmission Cap-Ex	Purchased Power
South Dakota Electric (SD)	<input checked="" type="checkbox"/> ¹		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ¹	<input checked="" type="checkbox"/>
South Dakota Electric (WY)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
South Dakota Electric (FERC)					<input checked="" type="checkbox"/>	
Wyoming Electric		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Colorado Electric		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Gas Utilities

	DSM/ Energy Efficiency	Integrity Additions	Bad Debt	Weather Normal	Pension Recovery	Fuel Cost	Revenue Decoupling	Fixed Cost Recovery ²
Arkansas Gas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	39%
Colorado Gas	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		47%
Colorado Gas Dist.	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		36%
Iowa Gas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		70%
Kansas Gas		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		64%
Nebraska Gas		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		70%
Rocky Mountain Natural Gas ³		<input checked="" type="checkbox"/>						
Wyoming Gas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		53%

☒ Commission approved cost adjustment

¹ South Dakota cost adjustments for environmental and transmission capex included in rate moratorium; applies only to non-FERC jurisdictional assets

² Fixed cost recovery listed for residential customers is as of last rate base review

³ RMNG, an intrastate transmission pipeline, provides natural gas transmission and wholesale services, has an SSIR recovery mechanism; other cost recovery mechanisms are not applicable to RMNG

37

7
 8 **Q. Do Atmos Energy and OneGas, Inc. have similar regulatory mechanisms in place**
 9 **for their Kansas operations?**

10 **A. Yes, Atmos and OneGas have similar regulatory mechanisms in place for their**

1 operation in Kansas.^{9, 10}

Comprehensive Regulatory Mechanisms

DESCRIPTION	KANSAS	OKLAHOMA	TEXAS
Interim capital recovery	✓	✓	✓
Weather normalization	✓	✓	✓
Purchased gas riders (including gas cost portion of bad debts)	✓	✓	✓
Energy efficiency/conservation programs		✓	✓*
Pension and other post-retirement benefits trackers	✓	✓	✓
Cost-of-service adjustment		✓	✓*
COVID-19 accounting orders	✓	✓	✓
Regulatory asset for Winter Storm Uri	✓	✓	✓

* Five jurisdictions in Texas; not all mechanisms apply to each jurisdiction

2



REGULATORY CONSTRUCT | 13

⁹ One Gas, Investor Presentation: Resilient and Reliable Energy for a Better Tomorrow, American Gas Association Financial Forum, May 19-20, 2021

¹⁰ Atmos Energy, Investor Presentation, June 1, 2021.

Regulatory Mechanisms To Support Recovery

Jurisdiction	Annual Revenue and Lag Mechanisms		Revenue Stability and Lag Mechanisms			Other
	Annual Rate Stabilization	Infrastructure	Pension and Retirement Cost Trackers	WNA	Bad Debt in GCA	Recovery of Certain COVID-19 Costs
Colorado		✓	✓			✓
Kansas		✓	✓	✓	✓	✓
Kentucky		✓		✓	✓	✓
Tennessee	✓	✓	✓	✓	✓	
Virginia		✓		✓	✓	✓
Louisiana	✓	✓	✓	✓		✓
Mississippi	✓	✓		✓		✓
Mid-Tex	✓	✓	✓	✓	✓	✓
West Texas	✓	✓	✓	✓	✓	✓
APT		✓	✓			✓

As of June 1, 2021

50

Q. Are these regulatory mechanisms unique to Kansas gas distribution utilities?

A. The regulatory mechanisms offered to gas distribution utilities in Kansas are similar to those in other state. As the Black Hills slide indicates Kansas has granted it authority to use most every mechanism that is available to BHC it in other jurisdictions in addition to a rate design that provides Black Hills a relatively high degree of fixed cost recovery via a monthly customer charge.

Macro-Economic Environment & Investor Expectations

Q. Is it necessary for the Commission to create a forecast of the broad economy in order to determine a reasonable return for Black Hills?

A. In my opinion, it is not necessary for the Commission to make a forecast of the

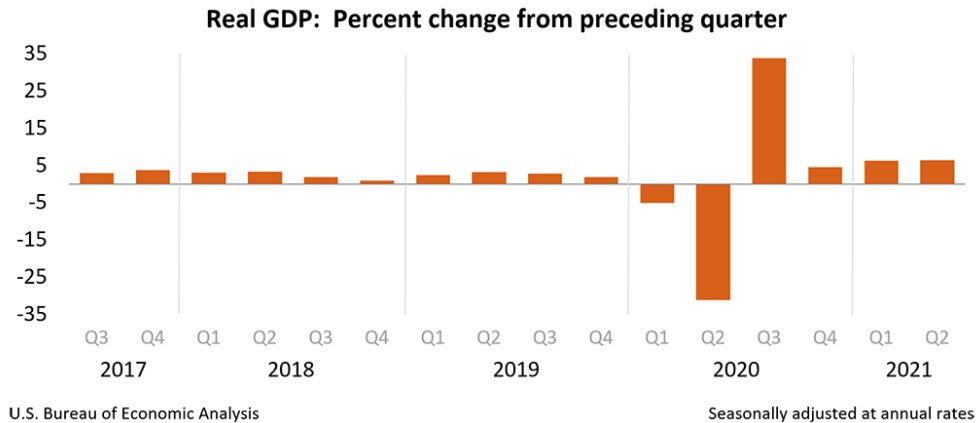
1 economy's future or even adopt a specific perspective on the economy's direction when
2 setting an allowed return. This is because the Commission's focus is on the investors'
3 required return, which is a product of the investors' expectations for the economy (not
4 the Commission's expectations). Investors' expectations for the economy are
5 contained within the Commission's cost of capital decision, provided the
6 Commission's decision is based on market-derived data such as current stock prices,
7 interest rates, and other data that conveys investors' outlook for the economy.

8 It is a well-accepted premise that our capital markets are efficient, where investors
9 factor all available information into their decisions to buy and sell debt and equity
10 securities. Those decisions establish the prices that are used in cost of capital analyses.
11 Furthermore, rational, profit-maximizing investors are forward looking. Accordingly,
12 investors incorporate their own forecasts of the economy into their decisions in their
13 best attempt to maximize returns. Therefore, the price data incorporates the investors'
14 forecasts for the economy and those expectations are embedded in the investors'
15 required return that we are measuring.

16 **Q. Do you believe the Commission benefits from some discussion of economic**
17 **forecast when setting allowed returns?**

18 A. Yes, particularly in the wake of the 2020 recession and ongoing pandemic, to provide
19 context around the market data that goes into a cost of capital witnesses' analyses. The

1 World Health Organization declared a global pandemic in early March of 2020.¹¹
 2 Within the first quarter of 2020, the effects of stay-at-home mandates, closures of
 3 businesses in the restaurant, hospitality, entertainment, and travel industries all began
 4 to appear in the U.S. real GDP with a 5.1% decline from the previous quarter. This
 5 was followed by a record -31.2% decline in the second quarter of 2020.¹² The decline
 6 in real GDP was historic as was the 33.8% rebound that occurred in third quarter as the
 7 economy began to reopen.



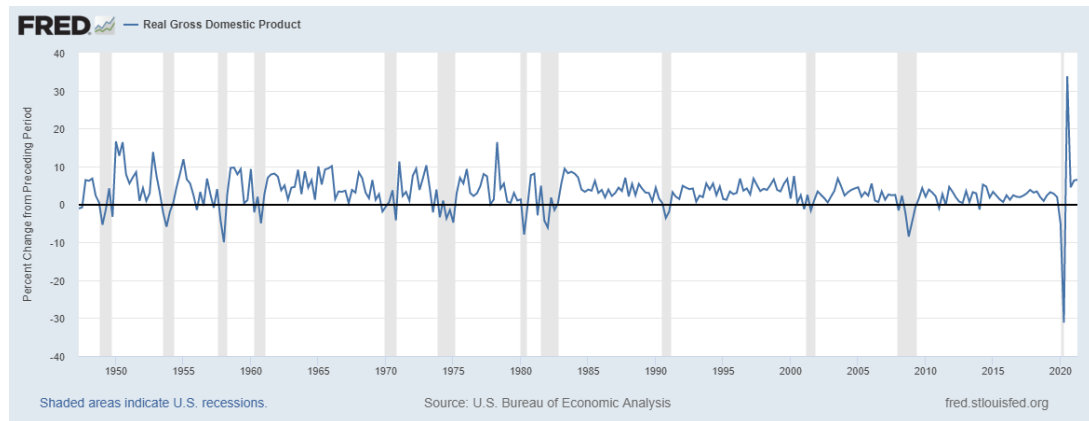
8
 9 The U.S. economy contracted in two consecutive quarters, the threshold for meeting
 10 the definition of an economic recession; the peak of the expansion occurred in February
 11 of 2020 and the trough of the recession in April of 2020.¹³ The trough is only a marker
 12 of the point in time when economic growth turns from contraction to expansion; it is
 13 not the point at the economy has returned to operating at its full capacity as that can

¹¹ <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline#event-71>

¹² Bureau of Economic Analysis, https://www.bea.gov/sites/default/files/2021-07/gdp2q21_adv.pdf

¹³ National Bureau of Economic Research (NBER); Business Cycle Dating Analysis, released July 19, 2021; <https://www.nber.org/news/business-cycle-dating-committee-announcement-july-19-2021>

1 take a considerable amount of time. The 2020 Recession at only two months in length
 2 is the shortest on record for NBER's data that begins in 1860 tracking 34 business
 3 cycles. As depicted in the following chart, it is also the largest quarter to quarter
 4 contraction in the U.S. economy since quarterly data was tracked beginning in 1947.



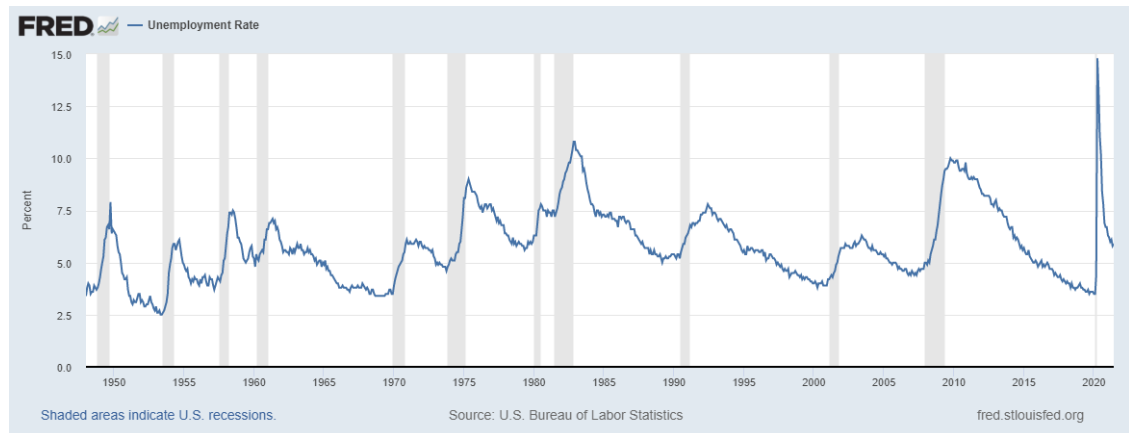
5
 6 Annual real GDP changes have been tracked since 1930. The 2020 down turn
 7 measured at year end at -3.4% appears less severe given the third quarter rebound and
 8 it is far from the worst full year contraction with 1930 at -8.5%, 1931 at -6.4%, 1932
 9 at -12.9% and 1946 at -11.6%. By the second quarter of 2021, U.S. real GDP output
 10 had completely recovered and exceed the February 2020 peak.¹⁴ U.S. real GDP is
 11 forecasted to grow at annual rates of 6.6% in 2021, 3.8% in 2022, and 2.5% in 2023.¹⁵
 12 Longer-term, U.S. economic growth is forecast to return equal to levels expected prior

¹⁴ Bureau of Economic Analysis, Table 1.1.6. Real Gross Domestic Product, Chained Dollars; Revised on: July 29, 2021; www.bea.gov

¹⁵ The Conference Board, The Conference Board Economic Forecast for the US Economy; July 14, 2021; <https://www.conference-board.org/research/us-forecast>

1 to the Covid Pandemic; in the range of 1.8% to 2.0% annual growth in real GDP.¹⁶

2 Unemployment followed a path similar to the real GDP data as depicted in the
3 following chart. The 3.6% unemployment levels in 2019 was the lowest since 1966
4 and it had remained below 4.0% since May of 2018.¹⁷ At its peak, the unemployment
5 rate reached a high of 14.8% in April of 2020, falling in half by November of 2020.
6 Unemployment has continued to fall to 5.9% in June and is forecasted to return to pre-
7 pandemic levels by the end of 2022;¹⁸ with the important caveat that recoveries of both
8 GDP and employment levels will be uneven across industries and socio-economic
9 groups.



10

11 Real GDP and unemployment rates are by far the most reported measures of the
12 economy, other measures of the economy that are less often cited showed similar,

¹⁶ Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy; Quarterly Projections recorded from <https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm>

¹⁷ Bureau of Labor Statistics, <https://data.bls.gov/pdq/SurveyOutputServlet>

¹⁸ Congressional Budget Office, Additional Information About the Updated Budget and Economic Outlook: 2021 to 2031; July 19, 2021; <https://www.cbo.gov/publication/57263>

1 dramatic results with the pandemic. The recovery has also been dramatic. There are
2 serious risks to the economic recovery, both in the U.S. and globally. Comments of
3 the Federal Open Market Committee (FOMC) sum up the risk to the economy as being
4 directly dependent on the course of the virus.¹⁹ From June 2020 through July 2021
5 FOMC published statements on the U.S. economy have repeatedly warned of the direct
6 link between the pandemic and the economic recovery by including the phrase, “(t)he
7 path of the economy continues to depend on the course of the virus” in each statement.
8 This is an unprecedented statement by the Federal Reserve, clearly as it has been a
9 consistent message it is a risk that is known to investors. Having already experienced
10 a brief, severe recession caused by the pandemic, investors are well aware of the risks
11 to corporate profits and the broad economy and have factored those risks into their
12 decisions.

13 **Q. Does the risk to the economic recovery demand that the Commission provide**
14 **Black Hills a premium or risk adder to compensate investors?**

15 A. No, not at all because these risk factors, as unique and unprecedented as they are, are
16 well known to investors. We know that financial markets are efficient, investors
17 constantly assess and re-assess these risks and price securities accordingly, including

¹⁹ <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200610a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20200916a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20201105a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20201216a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20210127a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20210317a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20210428a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20210616a.htm>
<https://www.federalreserve.gov/newsevents/pressreleases/monetary20210728a.htm>

1 the securities of Staff's proxy group. Thus, these risks are captured in my analysis of
2 the proxy group and no explicit adjustment is warranted.

3 **Q. Do you agree with Mr. McKenzie's capital market outlook presented in his**
4 **testimony?**

5 A. I do not have an opinion about this, as it is not necessary for the Commission to
6 determine whether it agrees with a witness' outlook for the capital markets in order to
7 determine an appropriate ROE. What is important is that the information used to
8 estimate the cost of capital is recent data from the capital markets; in this case stock
9 prices and interest rates. Investors price securities with an eye to the future. Securities
10 prices are forward looking, encompassing all the information that is publicly available,
11 and likely non-public information too. There is no need for a cost of equity analyst or
12 the Commission to adjust the resulting macro-economic forecasts because it is likely
13 the adjustment will be wrong.

Capital Structure

14 **Q. What is the capital structure requested by Black Hills to calculate its revenue**
15 **requirement?**

16 A. Black Hills' requested rate of return and revenue requirement are based on a capital
17 structure consisting of 49.66% long-term debt and 50.34% common equity; there is no
18 preferred stock or short-term debt in its capitalization. The capital costs and balances
19 are as of the end of its test year, December 31, 2020. Black Hills' capital structure is

1 supported by the testimony of Christianne M. Curran, Assistant Treasurer for Black
2 Hills Service Company, LLC.

3 **Q. Does Black Hills issue its own debt and equity to the public?**

4 A. No. Black Hills does not issue its own long-term debt, and Black Hills acknowledges
5 that fact.²⁰ Black Hills is not a corporation distinct from BHC, it is a limited liability
6 company, a business unit of BHC. Black Hills obtains all of its debt and equity capital
7 from its parent, BHC. Investors cannot invest directly in Black Hills, they can only
8 invest through the purchase of stock or bonds sold by BHC.

9 **Q. How did Black Hills determine this capital structure of 49.66% long-term debt**
10 **and 50.34% common equity?**

11 A. That topic is not thoroughly discussed in the testimony or Application. Ms. Curran
12 states, “The Company (Black Hills Corporation) is proposing a 50.34% equity and
13 49.66 long-term debt capital structure based on the actual capital structure of Black
14 Hills as of December 31, 2020.”²¹ Further, stating that, “The Company (Black Hills
15 Corporation) targets 50% equity and believes this is a reasonable capitalization level
16 and appropriate to support its investment grade rating.”²² The Application does not
17 contain any additional explanation of how BHC or Black Hills concluded that this is a
18 reasonable *and* least cost capital structure for setting Black Hills revenue requirement.

²⁰ Curran Direct p.9, lines 13-14.

²¹ Curran Direct p.11, lines 19-20.

²² Curran Direct p.12, lines 8-9.

1 **Q. Does BHC have a comparable 50/50 capital structure?**

2 A. No, the capital structure of BHC consists of about 57% long-term debt and 43%
3 common equity.²³

4 **Q. In the quote cited above, Ms Curran states that the capital used to set a Black Hills**
5 **revenue requirement should be its “actual” capital structure. Do you agree?**

6 A. It is clear from Ms. Curran’s testimony that Staff and Black Hills disagree on the
7 meaning of their term “actual” in describing the capital structure. Black Hills’
8 witnesses refer to the capital structure that was assigned or allocated to Black Hills by
9 BHC management as Black Hills’ “actual” capital structure. Staff believes it is more
10 accurate and consistent with the Commission’s past actions to use the phrase
11 “assigned” capital structure that management applies to a business unit or subsidiary
12 particularly when it is different from the parent’s capital structure.

13 **Q. Do parent companies have an incentive to assign utility business units a higher**
14 **equity ratio than that of the parent?**

15 A. Yes, there is a significant financial incentive that accrues to stockholders if a business
16 unit is assigned a higher equity ratio than exists at the parent company. When the ROR
17 is based on a higher equity ratio than actually exists at the parent, the parent is able to
18 earn an equity return on what is in reality debt capital. That equity return is also grossed

²³ Black Hills Corporation SEC Form 10-K, for period ending December 31, 2020, filed February 26, 2021. Value-Line Investment Survey, Black Hills Corp, April 23, 2021, and Response to KCC Data Request 181 and 182 attached in Schedule AHG-2.

1 up to recoup an income tax expense that the parent company does not incur. This is
2 due to the fact that interest expense is tax deductible, whereas operating income
3 (resulting from the margin necessary to produce an ROE) is not. The result is a higher
4 return to the parent than would occur if the utility business unit's revenue requirement
5 was set using the parent's capital structure. This result is a windfall for shareholders
6 because they receive a higher return on equity than was intended and that windfall is
7 paid for by consumers.

8 Staff's view of this issue is not unique, it is discussed in regulatory theory and
9 application determining a revenue requirement. Frequently the topic is discussed using
10 the term "double leverage"²⁴ where equity is substituted for what is in reality debt in
11 the capital ratios used to compute a revenue requirement. Although this instance is not
12 the text book example of double leverage since Black Hills does not issue its own debt
13 to the public, BHC's financial strategy accomplishes the same ends; it substitutes equity
14 in the revenue requirement capital structure for what is in reality debt capital.

15 **Q. What capital structure is Staff proposing for Black Hills?**

16 A. I propose an ROR for Black Hills that incorporates BHC's capital structure and
17 embedded cost of debt as of June 30, 2021, provided in response to KCC data requests
18 181 and 182. (Attached as Schedule AHG-2)

²⁴ The Process of Ratemaking; Leonard Saul Goodman; Public Utility Reports, Inc.; pp. 610-612.
Principles of Public Utility Rates, second edition; Bonebright, Danielsens, Kamerschein; Public Utility Reports,
Inc.; pp. 306-310.

Staff Proposed Rate of Return for Black Hills Based on Consolidated Capital Structure and Consolidated Cost of Debt for Black Hills Corporation at June 30 2021			
	Weight	Cost	Weighted Cost
Long-term Debt	57.04%	4.03%	2.30%
Common Equity	42.96%	9.20%	3.95%
			6.25%
Sources:			
Responses to KCC DR 181 & 182			

1 **Q. What is the effect of using an assigned capital structure with an equity ratio**
2 **greater than actual capital ratios of BHC?**

3 A. It results in a return to shareholders far great than that stated in the Application and not
4 supported by any testimony.

5 **Q. What is the return produced by Black Hills' proposed ROR?**

6 A. The following two tables calculate the effective ROE that BHC shareholders would
7 receive if the Commission adopts Black Hills' proposed 10.15% ROE and 50% equity
8 capital structure. The first table takes the ROR inputs from Section 7 of the Application
9 to compute a weighted cost of capital or ROR of 7.05% and an 8.41% ROR once the
10 cost of the equity component is grossed up to recover associated income tax expenses.
11 The 8.41% pre-tax ROR is based on the capital structure BHC assigned to Black Hills.

Black Hills/Kansas Gas Utility Co. LLC Rate of Return in Section 7 of Application Grossed Up of Income Tax Costs Test Year Ended December 31, 2020					
	Balance	Weight	Cost	Weighted Cost	Tax Gross Up
Long-term Debt	\$ 108,000,000	49.66%	3.91%	1.94%	1.94%
Common Equity	\$ 109,469,149	50.34%	10.15%	5.11%	6.47%
	\$ 217,469,149	100.00%		7.05%	8.41%

Source: 21-BHCG-418-RTS, Section 7 grossed up for income tax costs using Staff's 0.79 tax gross up factor applied to the cost of equity

1 The second table assumes that the revenue requirement is set using the 8.41% pre-tax
2 ROR, recognizing the reality of BHC's consolidated capital structure. The cost of debt
3 increases slightly to reflect the consolidated cost of debt for BHC. After the ROR funds
4 the cost of debt, any residual is return available to BHC shareholders, resulting in an
5 ROE of 11.23%.

Effective Return on Equity for BHC Shareholders Based on Black Hills Requested 7.05% ROR BHC's Consolidated Capital Structure and Staff's Tax Gross Up Factor					
		Weight	Cost	Weighted Cost	Weighted Cost With Tax Gross Up
Long-term Debt	3,530,216,000	57.04%	4.03%	2.30%	2.30%
Common Equity	\$ 2,659,040,000	42.96%	11.23%	4.82%	6.11%
	\$ 6,189,256,000	100.00%		7.12%	8.41%

Assumptions & Methodology:
1) 8.41% ROR based on Section 7 grossed up for income tax costs
2) Responses to KCC DR 181 & 182 used to determine Black Hills Corp consolidated capital structure and cost of debt
3) 11.23% is the resulting ROE based on BHC's actual capitalization, BHC cost of debt, and revenue requirement based on filed ROR Section 7.

6 **Q. In recommending a capital structure that is different from that in the Application,**
7 **is Staff seeking to require a change in Black Hills or BHC's capitalization?**

1 A. No. My recommendation is solely for the purpose of calculating a revenue requirement
2 for Black Hills. Staff is not asking the Commission order BHC change its capital
3 structure or the manner in which it assigns capital to its business units.

4 **Q. Is Staff's recommendation on capital structure in this docket consistent with**
5 **capital structure policies applied to utilities in Kansas?**

6 A. Yes it is consistent. Staff's position on this issue evolved over time and it has been
7 applied in gas, electric, and telephone rate cases over the past two decades. In Kansas,
8 capital structure issues were brought to the forefront with the business failures of
9 Westar Energy's investments in non-utility businesses and UtiliCorp United's failed
10 foray in energy trading. Both episodes resulted in large amounts of debt added to their
11 balance sheets, soon followed by write-downs of unprofitable, non-utility assets
12 resulting in dramatically lower equity ratios. These two entities had drastically eroded
13 their equity capital while attempting to establish utility revenue requirements using
14 equity ratios higher than the parent consolidated capital structure. Furthermore, Staff
15 has taken this same position in mergers²⁵ and settlement agreements in merger
16 dockets.²⁶

17 **Q. Was this capital structure issue a point of contention in Black Hills' last rate case?**

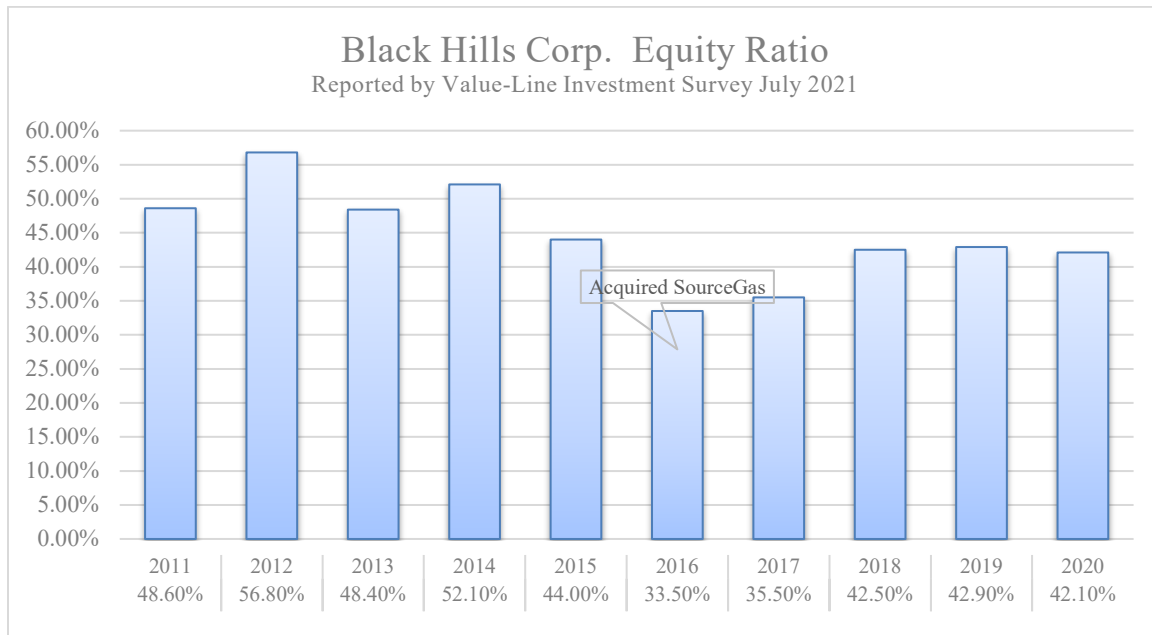
18 A. No. Black Hills last rate case was 14-BHCG-502-RTS filed April 29, 2014 using a

²⁵ Direct Testimony of Jeffery D. McClanahan, Docket 16-KCPE-593-ACQ; pp. 12-13.

²⁶ Order Granting Joint Motion to Approve the Unanimous Settlement Agreement and Approval of the Joint Application; Docket 16-EPDE-410-ACQ; Exhibit A, Paragraph 36; December 22, 2016.
Direct Testimony of Adam H. Gatewood; Docket 16-EPDE-410-ACQ, filed October 6, 2016. pp. 15-17.

1 2013 test year. In the 14-502 Docket the capital structure Black Hills used in the ROR
2 consisted of 50.34% equity, very nearly the same as that of BHC so Staff did not object
3 to the proposed capital structure Black Hills' used to develop the ROR.

4 The following chart highlights the change in BHC's equity ratio after the 14-502
5 Docket primarily driven by the debt BHC issued to acquire a natural gas utility
6 company named SourceGas in February 2016. This is the first full rate case for Black
7 Hills since the 14-502 Docket and change in its capitalization.



8 **Cost of Debt**

9 **Q. What is the cost of debt contained in Black Hills' requested revenue requirement?**

10 **A. Black Hills' revenue requirement is based on a 3.91% cost of long-term debt as of the**
11 **end of its test year at December 31, 2021. That input is also sponsored by Christianne**

1 M. Curran for Black Hills. 3.91% cost of long-term debt reflects the embedded cost of
2 Black Hills Corporation Senior unsecured notes.

3 **Q. Do you propose any adjustments to Black Hills' cost of debt?**

4 A. Yes, first it is important the cost of debt and debt balances reflect an update to June 30,
5 2021, to be consistent with Staff's updates to the test year. Second, the capital structure
6 should reflect the cost of debt of the entity that provides financing for the utility which
7 is BHC. Staff Data Requests 181 and 182 (attached, Schedule AHG-2) requested the
8 embedded cost of debt for BHC on a consolidated basis. Using BHC's consolidated
9 cost of debt synchronizes the long-term debt cost with the consolidated capital
10 structure. BHC's embedded cost of debt is slightly higher than the cost of debt in the
11 Application; 4.03% compared to 3.91%.

Rebuttal to Black Hills' proposed 10.15% Return on Equity

12 **Q. What is the ROE proposed by Black Hills?**

13 A. Black Hills' proposes a revenue requirement based on a 10.15% ROE supported by Mr.
14 McKenzie. His range is 9.50% to 10.80%.²⁷ Mr. McKenzie estimates his range using
15 DCF, CAPM, empirical CAPM, utility risk premium, and expected earnings analyses.

16 **Q. How did Mr. McKenzie establish the end points for his range of 9.50% to 10.80%?**

²⁷ Direct Testimony of Adrien M. McKenzie, 21-BHCG-418-RTS; Filed May 7, 2021; KSG Direct Exhibit AMM-2.

1 A. Based on statements in Mr. McKenzie's testimony, he set the end points relying on the
2 average and midpoint results of his financial models as a guide.²⁸ The 10.15%
3 recommendation is the average of his two end points.

4 **Q. Please summarize your disagreements with Black Hills' cost of equity analysis and**
5 **recommendations.**

6 A. First and foremost, I disagree with the forecasted earnings growth rates Mr. McKenzie
7 relies on in his analysis. Mr. McKenzie uses the three to five year earnings growth rate
8 estimates as surrogates for long-run growth forecasts that extend far beyond that time
9 span. This issue directly affects the results from four of the five financial models in his
10 analysis; the discounted cash flow model (DCF), capital asset pricing model (CAPM),
11 and empirical capital asset pricing model (eCAPM). His application of these growth
12 rates cause him to overstate investors' required returns in not only natural gas utilities
13 but also the broad stock market indexes. Therefore he fails to adhere to key tenets of
14 the *Hope* and *Bluefield* decisions published by the Court that stated allowed returns
15 must be commensurate with investments of comparable risk. Second, I have specific
16 disagreements with each of the financial models in his analysis.

17 **Q. Can you estimate the effect of Mr. McKenzie's errors?**

18 A. The errors amount to a significant overestimate of Black Hills' cost of equity. The
19 following table adjusts Mr. McKenzie's overly optimistic growth rate and

²⁸ Direct Testimony of Adrien M. McKenzie, 21-BHCG-418-RTS; Filed May 7, 2021; KSG Direct Exhibit
AMM Direct p. 68 lines 5-8.

1 inappropriate application of a small-company premium; issues that reduce his estimates
 2 by 78 to 363 basis points. With the corrections, his range of results are similar to
 3 Staff's.

Cost of Equity Summary of Results From Exhibit AMM-2 Corrected							
	Exhibit AMM-2		1	Corrections 2		Corrected	
	Average	Midpoint	Growth Rate	Small Cap Premium	Total	Results from AMM-2 Average	Midpoint
<u>DCF</u>							
Value Line	10.55%	11.27%	-0.78%		-0.78%	9.77%	10.49%
IBES	8.38%	8.12%	-0.78%		-0.78%	7.60%	7.34%
Zacks	9.06%	8.61%	-0.78%		-0.78%	8.28%	7.83%
<u>CAPM</u>							
Current Bond Yield	11.64%	11.81%	-2.52%	-1.11%	-3.63%	8.01%	8.18%
Projected Bond Yield	11.76%	11.90%	-2.52%	-1.11%	-3.63%	8.13%	8.27%
<u>Empirical CAPM</u>							
Current Bond Yield	11.89%	12.00%	-2.52%	-1.11%	-3.63%	8.26%	8.37%
Projected Bond Yield	11.98%	12.07%	-2.52%	-1.11%	-3.63%	8.35%	8.44%
Corrections:							
1) Growth Rate: Reduction in Mr. McKenzie's average growth rate with inclusion of long-term forecasted nGDP growth							
2) Small Capitalization Premium: Removing small company risk premium from CAPM analyses							
3) Sum of correction in columns 1 and 2							

4
 5 **Q. Why is his sole reliance on analysts' three to five year earnings growth rate**
 6 **forecasts improper?**

7 A. The problem is that these short-term growth rates are substantially higher than investors
 8 expect to continue in the long-run, beyond that three to five year horizon. Investors
 9 incorporate long-run growth forecasts in their valuation analyses while Mr.
 10 McKenzie's analyses assumes those three to five year earnings growth rates continue
 11 in perpetuity. Using these short term growth rates as a surrogate for long-term growth
 12 as Mr. McKenzie has done in his analyses results in his eCAPM, CAPM, and DCF
 13 models overstating each models' cost of equity estimate for his proxy group. There is
 14 a strong link between economic growth of the broad economy and long-term returns

1 on equity investments, thus, it is reasonable to assume investors incorporate long-run
2 economic growth assumptions in their investment decisions.²⁹ Failing to incorporate
3 data sources that embody long-run forecasts, which point toward economic growth that
4 is slower than analysts' three to five year earnings growth estimates, cause Mr.
5 McKenzie to overstate the ROE necessary for Black Hills.

6 I only object to his use of short-run earnings growth forecasts because Mr. McKenzie
7 fails to include any long-run perspective of earnings growth with those short-run
8 forecasts. These short-term growth forecasts are the only growth estimates that Mr.
9 McKenzie incorporates in his analysis. My analysis incorporates short-run earnings
10 growth forecasts from the same sources, but also incorporates the long-run view that a
11 firm's earnings growth is constrained by the growth rate of the broad economy.

12 **Q. What is your estimate of how much Mr. McKenzie's sole reliance on three to five**
13 **year forecasted earnings growth rates overstates the ROE?**

14 A. Mr. McKinzie's DCF analyses results incorporate an average growth rate of 5.91%.³⁰
15 Incorporating Staff's long-run estimate of nominal GDP (nGDP) growth of 4.36%
16 weighted equally with Mr. McKinzie's 5.91% short-run growth rate results in a growth
17 estimate of 5.14%; 78 basis points lower.

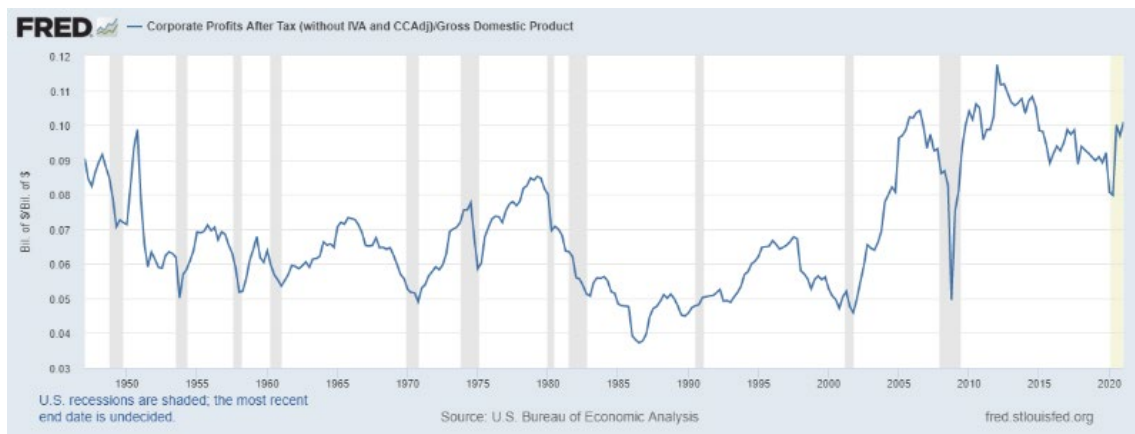
²⁹ Linking GDP Growth and Equity Returns, Monthly Insights from the Office of the Chairman, Goldman Sachs Asset Management, Jim O'Neill; May 2011.

³⁰ Excluding growth estimates of the DCF results that Mr. McKenzie removed from his reported average for being unreasonably high or low shown in Exhibit AMM-4.

1 Shown in his Exhibit AMM-6, Mr. McKenzie's CAPM analyses are based on an even
2 higher earnings growth estimate of 9.40% in perpetuity. In his CAPM analyses, Mr.
3 McKenzie develops a forecasted returns for the broad equity market of the S&P 500
4 Index. Giving equal weight to projected nGDP growth reduced that growth rate from
5 9.40% to 6.88%; 252 basis points.

6 **A. Is there evidence that GDP growth is an important consideration for investors?**

7 **Q.** Yes, investment professionals widely support the concept that broad economic growth
8 as measured by the (nGDP) is considered a ceiling for long-term earnings growth as I
9 discuss on pages 58 through 66. There is also the fact that if corporate profits, which
10 are a part of national income, grow at a rate that is so much greater than that of the
11 aggregate economy then corporate profits become an ever larger portion of GDP, a
12 phenomenon which has not occurred. The history of corporate profits as percentage of
13 GDP shown in the following graph reveals there is not a discernable trend that supports
14 Mr. McKenzie's position earnings grow at twice the rate of the entire economy and
15 becoming an ever larger portion of GDP.



16

1 **Q. Are there other issues in Mr. McKenzie’s CAPM and eCAPM analyses that cause**
2 **him to overestimate Black Hills’ cost of equity?**

3 A. Yes, Staff disagrees with the application of small company or market capitalization risk
4 premium adders that Mr. McKenzie applies to his CAPM and eCAPM analyses that,
5 on average, increase his cost of equity estimates by 111 basis points. He applies a
6 market capitalization based risk/return adjustment to each member of his proxy group.

7 **Q. What is Mr. McKenzie’s rationale for applying a market capitalization risk**
8 **premium?**

9 A. Mr. McKenzie applies this adjustment alleging that historical data has shown that small
10 companies (as measured by market capitalization) have earned higher returns than that
11 predicted by the CAPM. Mr. McKenzie’s 111 basis point upward adjustment relies
12 solely on the historic data reported by Duff & Phelps. There is overwhelming evidence
13 that that professionals and institutional money managers do not expect a small company
14 risk premium to occur in the future, and they doubt if it ever did in the past.

15 **Q. Please discuss why Staff has consistently opposed “small company premiums”**
16 **applied to the ROE granted to public utilities?**

17 A. Staff has consistently opposed this type of adjustment because there is evidence that
18 any such premium measured in historic market data is due to inaccurate data. Second,
19 if the premium did exist in the past, there is considerable doubt whether it can persist
20 in the future.

1 Empirical research by Tyler Shumway and Vincent A. Warther concluded that no such
2 size-premium has ever existed; rather, the data used to calculate the premium does not
3 accurately measure the returns of small-cap stocks.³¹ These researchers determined the
4 historic data understates the negative impact of delisting a stock. Stocks are delisted
5 from exchanges when they merge or are acquired by other companies. When delisting
6 occurs under those circumstances, the annual return for the newly merged or acquired
7 company continues to be calculated and continues to be tracked as part of the market
8 indexes. These positive events do not create a problem for measuring returns, as the
9 entity continues to exist with pricing data reported going forward from the delisting
10 date, just under a different name. Stocks are also delisted when their share price
11 falls below a minimum set by the exchange where they trade or if they enter bankruptcy.
12 When these negative events occur, those companies' stocks cease to trade on exchanges
13 and there ceases to be pricing data that captures the full extent of the price decline that
14 continues after delisting from the exchange. Eventually, the company may disappear,
15 which causes a 100% loss for its investors, which is not captured in the historic data.
16 Research found that historic-returns data have not done a good job of accurately
17 tracking or estimating the loss investors incur with these negative events.

18 These negative events occur almost exclusively with small companies, thus the
19 delisting bias has inflated the historic returns of small companies. The failure to
20 accurately track or estimate negative events has created an *appearance* that small

³¹ The Delisting Bias in CRSP's Nasdaq Data and Its Implications for the Size Effect, Tyler Shumway and Vincent A. Warther, *The Journal of Finance*, vol. LIV, No. 6, December 1999, pp. 2361-2378.

1 companies experience higher returns than the shareholders' actual returns. So, it is not
2 that smaller companies have consistently earned a higher return than larger companies;
3 the problem has been with the data used to compute the historic returns experienced by
4 small companies.

5 Even if analysts like Mr. McKenzie want to trust that a premium existed in the historic
6 data, there is question whether it can accurately be applied prospectively. Author and
7 professor of finance at New York University Aswath Damodaran does not apply or
8 advocate a small capitalization premium in valuation studies because there is little
9 research to support it. In professor Damodaran's view, the research finds that a small-
10 cap premium can be detected in historic data from 1928 through 2014; that premium is
11 best described as: 1) fragile as it barely meets the threshold of statistical significance;
12 and 2) volatile over history seeming to have dissipated after 1981.³²

13 **Q. What is the extent of the "small company risk premium" proposed by Mr.**
14 **McKenzie?**

15 A. Mr. McKenzie argues for a 111 basis point premium added to its ROE calculations
16 from his CAPM and eCAPM analyses. Removing the 111 basis point premium lowers
17 his highest ROE estimates, those produced by his CAPM and eCAPM, substantially.

³² The Small Cap Premium; Where is the Beef?; Musings on the Markets: My not-so-profound thoughts about valuation, corporate finance and the news of the day!; Saturday, April 11 2015.
<http://aswathdamodaran.blogspot.com/>

1 **Rebuttal to Applicant's Utility Risk Premium Analysis**

2 **Q. Do you agree with Mr. McKenzie's Utility Risk Premium analysis?**

3 A. I disagree with using this type of analysis in setting allowed returns because it has
4 several weaknesses that cast doubt on the applicability of the results to any specific
5 utility. Although the data provides an interesting view of regulatory and economic
6 history, I recommend the Commission disregard it in setting the allowed return because
7 for several reasons: *first*, the primary data is not derived in the competitive capital
8 markets by decision makers that have capital at risk; *second*, there is no control for risk
9 specific to each rate case decision; *third*, it is not a comprehensive measure of ROEs
10 used to set revenue requirements because many outcomes are not reported, and *fourth*,
11 the information was gathered over a unique time period of precipitously falling interest
12 rates that is unlikely to be repeated. To the best of my knowledge, the Commission has
13 never relied on this approach for setting an allowed return.

14 **Q. Please describe Mr. McKenzie's Utility Risk Premium study.**

15 A. Mr. McKenzie builds his Utility Risk Premium off of quarterly data of allowed returns
16 granted to gas distribution utilities by regulatory commissions from 1980 through 2020
17 and the yield on single-A rated public utility bonds. He obtains the quarterly data on
18 allowed returns from S&P Market Intelligence, commonly referred by its historic name,
19 Regulatory Research Associates (RRA). This data is used to derive a risk premium
20 that regulators have granted to natural gas utilities over the prevailing yields on "A"
21 rated utilities at the time of the rate case decision.

1 **Q. As to your first objection to Mr. McKenzie’s Utility Risk Premium methodology,**
2 **why do you contend it is not based on data derived from the competitive financial**
3 **markets?**

4 A. The primary data in the study is the allowed return adopted by public utility
5 commissions in rate cases from 1980 through 2020. This data is the result of
6 commissions’ decisions weighing not only the cost of equity analyses filed in the
7 dockets, but also all of the other elements and nuances of the rate case that is before
8 them, elements that may or may not exist in this docket; for example the presence or
9 absence of tracking mechanisms.

10 **Q. Why is it important that measurements are “market based”?**

11 A. Competitive financial markets are universally considered to be highly efficient in that
12 the reported prices reflect the actions of a willing buyer and a willing seller of a security
13 acting on the available information. The allowed ROEs granted by utility commissions
14 do not embody the decisions of countless market participants, rather utility
15 commissioners who are not taking an economic position in the securities but instead
16 making a public policy ruling. That is to say, those commissioners are not taking a
17 financial risk through a purchase or sale of stock when they set a return.

18 **Q. Why do you state that the reported returns granted by various commissions does**
19 **not provide a complete picture of history?**

1 A. Because not all allowed returns on equity used to establish a revenue requirement are
2 reported; at times there are agreements that remain silent on that issue even though a
3 new revenue requirement is established. It is impossible to know if those missing data
4 point skew the results. The amount of missing data points is noteworthy. Nationally,
5 from 1980 through 2020, there were 1,514 gas distribution rate cases; 329 or 22% of
6 those did not report an allowed ROE. In Kansas for that same period there were 33
7 natural gas distribution rate cases; 17 or 52% of those had no allowed ROE stated.³³
8 Thus, there is a significant number of cases setting natural gas distribution revenue
9 requirements during this time period where there was no reported return on equity
10 information.

11 **Q. Why do you contend that there is no control for risk in the data?**

12 A. Mr. McKenzie gathers the allowed returns on equity data on all natural gas dockets
13 without screening for the risk of the underlying gas utilities. There is no way to know
14 how the risk of the utilities involved in those cases compare to that of Black Hills
15 including their use regulatory mechanisms compared to those Black Hills has in place.
16 We cannot know for sure because we do not know how the risk of the gas utilities in
17 those historic rate cases compares to Black Hills's risk. The Commission needs to be
18 cautious in using a risk premium study like Mr. McKenzie has proposed because it does
19 not comport with the framework set out in the *Hope* and *Bluefield* decisions, as there

³³ Results of SPMI/RRA database of rate case history for natural gas distribution companies from 1980 through 2020 removing all observations for "limited-issue riders".

1 is no comparison of the risk of the natural gas utilities in that historic data to the risk of
2 Black Hills today.

3 **Q. Have regulatory policies evolved since 1980 and altered the industry's risk**
4 **profile?**

5 A. Yes, I believe it has changed over this 35 year time period, and Mr. McKenzie's risk
6 premium analysis fails to recognize these changes in the industry. Merely using an
7 interest rate relationship to allowed returns does not account for changes in risk. For
8 instance, rate design and trackers/riders/pass-through mechanisms have evolved over
9 the past three decades; these mechanisms lower the risk of utilities by shifting risk to
10 the consumer and reducing regulatory lag. The percentage of the revenue requirement
11 recovered through the customer charges in Kansas has also increased over these
12 decades resulting in a less volatile stream of revenues to the utility. These changes in
13 risk are not addressed in Mr. McKenzie's risk premium study.

14 Finally, the Commission should also consider that the data was gathered from a unique
15 period of time (1980 to 2018), a period of time when capital costs declined substantially
16 and in a consistent manner with only a few, brief upticks during those decades. This
17 measurement period begins with the early 1980s, an era of the highest capital costs in
18 more than a century.



2 The following chart provides a long-term view of interest rates through the yield on the
 3 Moody's Baa Corporate Bonds; the trend in interest rates on this instrument is
 4 indicative of the general trend in capital costs over the past century.



6 **Objections to Mr. McKenzie's "Comparable Earnings Test"**

7 **Q. Mr. McKenzie presents a "comparable earnings test" as a means to estimate Black**
 8 **Hill's required return. Is this a reasonable methodology to arrive at an estimate?**

9 **A.** The comparable earnings analysis is not a reasonable method of estimating investors'
 10 required return because it does not meet the Hope & Bluefield standards. The inputs
 11 to this type of analysis are not derived from financial markets or investors' transactions
 12 in markets (such as the purchase of a stock or bond at an exchange at a market

1 determined price). Rather, this data is purely accounting or book return information
2 based on historic levels of equity in the enterprise and the amount of earnings calculated
3 from specific accounting rules which do not reflect the actions of investors in the capital
4 markets as they react to changes in the economy and potential returns from alternative
5 investments.

6 For this calculation Mr. McKenzie is relying on data from Value-Line Investment
7 Survey's projected return on the book value of the utilities' equity capital. Mr.
8 McKenzie believes this return on book value is analogous to a utility commission
9 granting an allowed return on book value of a utility's rate base. This is incorrect
10 because investors have no ability to invest in a utility at the book value of its equity; all
11 of the proxy companies and BHC trade at market determined prices well above their
12 book value. Mr. McKenzie's proxy group trades at 1.8 times their book value. To the
13 best of my knowledge, the Commission has never relied on this approach for setting an
14 allowed return. I recommend that the Commission not place any weight on Mr.
15 McKenzie's Comparable Earnings analysis because it is inconsistent with the tenets of
16 the *Hope* and *Bluefield* decisions.

17 **Objections to Mr. McKenzie's Non-Utility Benchmark**

18 **Q. Does Mr. McKenzie's Non-Utility Benchmark provide support for his**
19 **recommended 10.15% allowed return on equity for Black Hills?**

20 **A.** Yes, but only because it contains the same errors as his analysis of the proxy group.
21 Mr. McKenzie's Non-Utility Benchmark Analysis applies the same data error to both

1 analyses; sole reliance on three to five year earnings growth rate projections, earnings
2 growth projections that are far above what is expected for the economy over the long-
3 run. As a result of applying the same flawed inputs to both the proxy group and the
4 non-utility group, he obtains comparable results. Because of the flaw in ignoring long-
5 term growth in the broad economy, neither study accurately depicts the market cost of
6 equity capital. It is important to remind the Commission that Mr. McKenzie performs
7 this analysis on unregulated, non-utility companies and to the best of my knowledge
8 the Commission has not relied on this type of analysis to determine an ROE.

Staff's Cost of Equity Analysis

9 **Q. Please summarize the results of your cost of equity analysis.**

10 A. Staff recommends the Commission authorize a 9.20% ROE. The table below
11 summarizes the cost of equity estimates from my study in this Docket; the details of
12 each financial model appears later in my testimony. I relied on a discounted cash flow
13 (DCF) model, a variation of the DCF model known as an internal rate of return (IRR)
14 analysis, and the capital asset pricing model (CAPM). These are the models I typically
15 use to estimate a utility's required return on equity. The results in this table are based
16 on capital markets data taken from the six month period of February 8, 2021, through
17 August 2, 2021.

Summary of Staff's Cost of Equity Estimates 21-BHCG-418-RTS			
Discounted Cash Flow Analyses		Mean	Low High
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts		9.04%	8.57% 9.51%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast		8.66%	7.66% 10.56%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1928 - 2020, Reported at Damodaran On-Line	Arithmetic	9.95%	11.56%
	Geometric	8.68%	9.89%
Based on Forecasted Return Data			
J.P. Morgan Asset Management (2021 edition)		6.35%	7.40%
BlackRock		6.25%	7.50%
Duff & Phelps Forecasted Risk Premium		6.90%	8.28%

1

2 **Q. For a point of comparison, will you please summarize return on equity decisions**
3 **by this Commission and other Commissions across the country?**

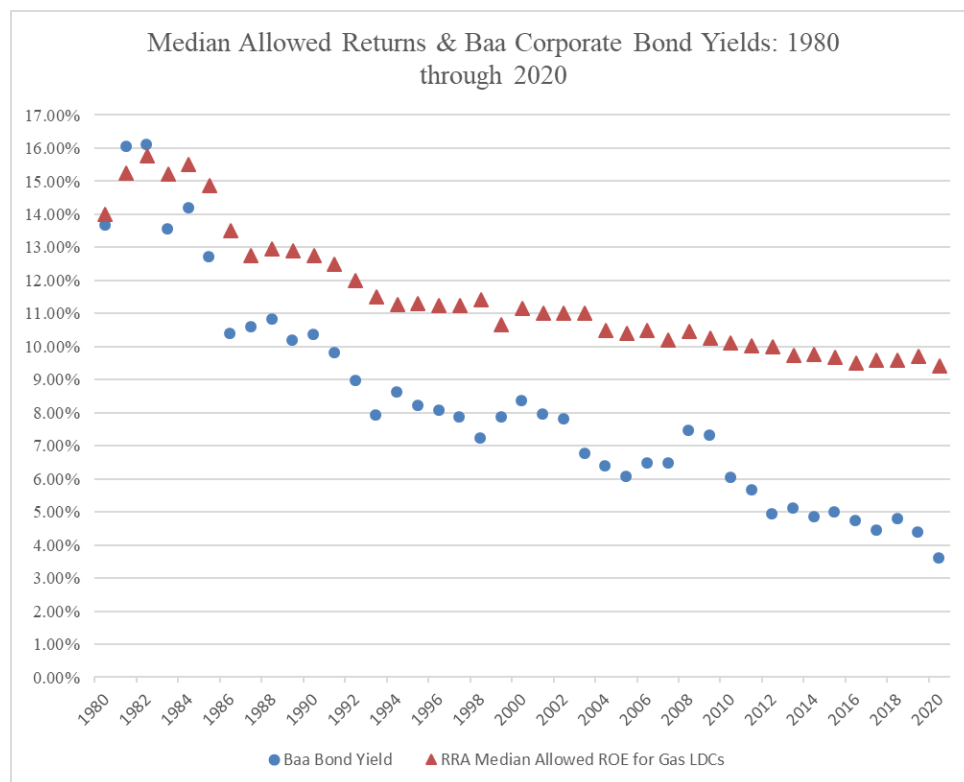
4 A. The first table below contains allowed return on equity decisions made by this
5 Commission in litigated rate cases. As a point of reference to the prevailing capital
6 markets at that time, I included the yield on the Baa/BBB rated public utility bonds as
7 of the month of the Commission's decision. In addition to these Commission
8 determinations, Staff, intervenors, and Evergy, Inc. reached an agreement to set rates
9 using a return on equity of 9.30% for Westar Energy in Docket No. 18-WSEE-328-
10 RTS and Kansas City Power & Light, Co. in Docket No. 18-KCPE-480-RTS. The
11 Commission issued an Order accepting the terms of that agreement in 18-WSEE-328-
12 RTS on September 27, 2018.

Commission Determined Allowed ROEs -- Kansas Utilities						
Company	Docket	Order Date	Requested ROE	Ordered ROE	Baa/BBB Utility Bond Yield	Risk Premium
Atmos Energy Corp.	19-ATMG-525-RTS	2/24/2020	10.25%	9.10%	3.92%	5.18%
Kansas City Power & Light	15-KCPE-116-RTS	9/10/2015	10.30%	9.30%	4.80%	4.50%
Atmos Energy Corp.	14-ATMG-320-RTS	9/4/2014	10.53%	9.10%	4.45%	4.65%
Kansas City Power & Light	12-KCPE-764-RTS	12/13/2012	10.40%	9.50%	4.21%	5.29%
Kansas City Power & Light	10-KCPE-415-RTS	11/22/2010	10.75%	10.00%	5.94%	4.06%
Westar Energy Inc.	05-WSEE-981-RTS	12/28/2005	11.50%	10.00%		
Westar Energy Inc.	01-WSRE-436-RTS	7/25/2001	12.75%	11.02%		
Kansas Gas Service Co.	193,305-U	4/15/1996	12.00%	10.50%		
Average						4.74%

Sources: S&P Capital IQ, reports on Kansas rate cases
Value-Line Investment Survey, Selection and Opinion; Yields on Utility Bonds (25/30 year) Baa/BBB rated

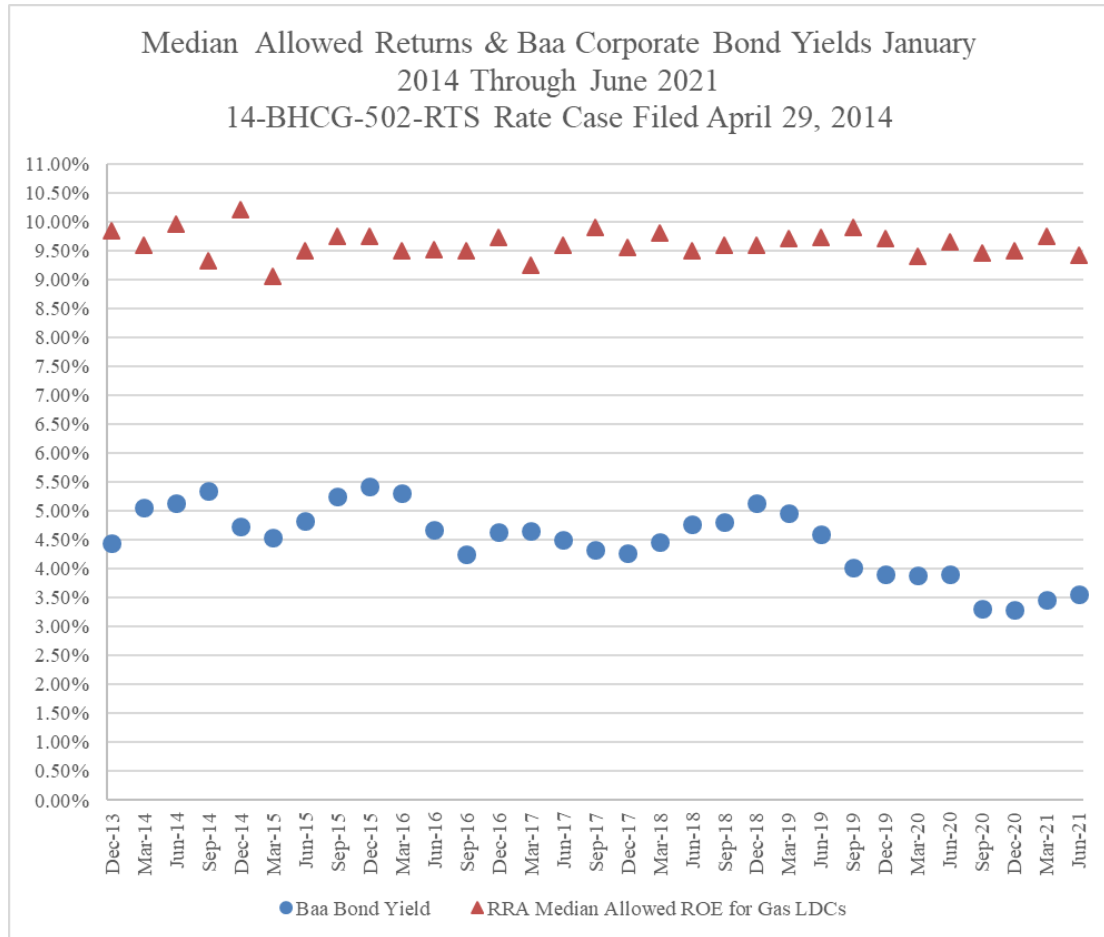
1

2 The following chart is broader in both the time period and reporting scope. It indicates
3 the median return on equity granted in fully litigated rate cases across the nation from
4 1980 through 2020. As a point of reference to the prevailing capital markets, I included
5 the average yield to maturity of Baa corporate bonds reported by Moody's Analytics.



6

1 The next chart highlights a shorter time period, the last five years from January 2014
 2 through June of 2021. Compared to the decline seen in the chart of the long-term
 3 perspective, the past five years show a plateau in the median allowed return granted
 4 and a decline in interest rates. Black Hills last rate case was filed on April 29, 2014.



5

6 **Q. How does Staff's recommendation compare to the returns available on other**
 7 **investments?**

8 **A.** The following table shows Staff's recommendation of a 9.20% ROE allows investors
 9 a risk premium over less risky debt investments. These types of income producing

1 securities are viewed as alternatives to investments in utility stocks because, like utility
2 stocks, bonds offer stable valuations and higher current income, relative to the equity
3 market. Risk premiums vary over time and across market conditions; thus, there is not
4 an absolute benchmark risk premium that sets a reasonable return on equity at a given
5 interest rate. Nor has the Commission set a definitive spread over bond yields;
6 however, the Commission's Order in Docket No. 15-KCPE-116-RTS (15-116) noted
7 that its decision allowed KCP&L a risk premium over the yield on its long-term bonds
8 of 525 basis points over the yield on its long-term debt.³⁴ At that time, just as now,
9 KCP&L and BHC have investment-grade bond ratings although BHC's bond rating is
10 slightly lower. In the 15-116 Docket, Staff argued the recommended ROE resulted in
11 a 525 basis point risk premium over the bond yield and that return was reasonable as it
12 offered stockholders a higher return than available on the lower risk debt securities.
13 The Commission agreed and applied Staff's risk premium to arrive at an allowed return
14 for KCP&L. The 9.20% ROE is consistent with the Commission's rationale in the 15-
15 116 Docket Order because it allows for a risk premium in excess of 587 basis points
16 over the yields on BHC's long-term bonds observed during the pricing period.

³⁴ Order issued on KCP&L's Application on Rate Change, 15-KCPE-116-RTS, September 10, 2015, para. 34.

KCC Staff's Risk Premium Over Fixed Income Yields Based on a 9.20% Return on Equity Fixed Income Yield Observations August 2020 through July 2021				
	30 Year (1) Treasury Bond	Utility Bonds (2) A/A	Utility Bonds (3) BBB/Baa	Black Hills Corp (4) Bonds YTM
Jul-21	1.94%	2.93%	3.18%	3.28%
Jun-21	2.16%	3.13%	3.37%	3.55%
May-21	2.32%	3.31%	3.56%	3.69%
Apr-21	2.30%	3.31%	3.58%	3.65%
Mar-21	2.34%	3.42%	3.72%	3.78%
Feb-21	2.04%	3.05%	3.33%	3.42%
Jan-21	1.82%	2.86%	3.15%	3.14%
Dec-20	1.67%	2.74%	3.03%	3.02%
Nov-20	1.62%	2.81%	3.09%	3.15%
Oct-20	1.57%	2.91%	3.18%	3.21%
Sep-20	1.42%	2.81%	3.07%	3.13%
Aug-20	1.36%	2.66%	2.93%	2.95%
Average	1.88%	2.99%	3.26%	3.33%
KCC Staff's Recommended ROE				9.20%
Average Yield on 30 Year Treasury Bond				1.88%
Equity Risk Premium Over the 30-Year Treasury Bond Yield				7.32%
KCC Staff's Recommended ROE				9.20%
Average Yield on "A" Rated Utility Bonds				2.99%
Equity Risk Premium Over "A" Utility Bond Yield				6.21%
KCC Staff's Recommended ROE				9.20%
Average Yield on "BBB/Baa" Rated Utility Bonds				3.26%
Equity Risk Premium Over "BBB/Baa" Utility Bond Yield				5.94%
KCC Staff's Recommended ROE				9.20%
Average Yield to Maturity on Black Hills Corp Unsec Notes				3.33%
Premium over Yield on Black Hills Corp Unsec. Notes				5.87%
1) Board of Governors of the Federal Reserve System, 30-Year Treasury Constant Maturity (Federal Reserve Bank of St. Louis, Release H.15) 2 & 3) Yield on A and BBB/Baa Rated Public Utility Bonds 25 to 30 Maturity Reported weekly in Value-Line Investment Survey, Selection & Opinion Section 4) Monthly Average yield to maturity reported by FINRA on Black Hills Corp. (2049 3.875% Sr.Unsec Notes & 2046 4.20% Sr. Unsec. Notes)				

Standards for a Just & Reasonable Rate of Return

2 **Q. What standards should commissions consider when authorizing a rate of return?**

3 A. The standards for setting a just and reasonable rate of return require that, to be
 4 reasonable, the allowed return must reflect the risks associated with an equity
 5 investment in the utility. For the allowed return to be in that reasonable range, it must

1 compensate for those added risks while capturing a fair proportion of benefits for
2 consumers. The allowed ROE is best described as the forward-looking discount rate
3 necessary to induce equity investors to commit their capital to the enterprise. Standards
4 used to gauge the fairness and reasonableness of an allowed ROE have been stated by
5 courts, as the result of appeals of decisions issued by regulatory agencies. Financial
6 analysts and policy-makers rely on the courts' decisions as a guide in estimating the
7 appropriate cost of capital. The opinions do not articulate precisely how to estimate or
8 model a reasonable cost of capital. Instead, the decisions provide critical questions for
9 policy makers and analysts to consider in determining a reasonable return for a
10 regulated utility.

11 In general, United States Supreme Court decisions state that returns granted to
12 regulated public utilities should: (1) be commensurate with returns on investments of
13 similar risk; (2) be sufficient to assure the financial integrity of the utility under
14 efficient economic management; and (3) change over time with changes in the money
15 market and business conditions.³⁵ An important take-away from these decisions is that
16 the Supreme Court of the United States has afforded regulatory agencies a significant
17 amount of latitude in establishing an appropriate ROR and ROE for a utility. The
18 Kansas Supreme Court has recognized and follows this body of law.³⁶ This

³⁵ *Smyth v. Ames*, 169 U.S. 466 (1898); *Wilcox v. Consolidated Gas Co.*, 212 U.S. 19, 48-49 (1909); *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-3 (1923); *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591, 603 (1944).

³⁶ *Kansas Gas & Elec. Co. v. State Corp. Comm'n*, 239 Kan. 483, 491, 720 P. 2d 1063, 1072 (1986).

1 Commission has noted this fact in Orders issued in previous dockets.³⁷

2 **Q. Will you please discuss how financial analysts apply the standards established by**
3 **the Courts?**

4 A. It is commonly understood that for an allowed ROE to meet the legal standards, the
5 return should be as specific as possible to the utility in question. Financial analysts
6 achieve this goal by analyzing not only the utility in question, when it is possible to do
7 so, but also a proxy group of similarly situated utilities.

8 There are several court cases that, as a group, are viewed as the keystone to measuring
9 the adequacy of a utility's allowed return. The earliest of these decisions go back to an
10 era when it was not only the "rate of return" at issue, but also the fundamental
11 measurement of the investment in the utility enterprise, commonly referred to as rate
12 base. This is less of an issue today as regulators, utility management, and investors
13 readily accept actual historic-depreciated value as the measure of investment to
14 estimate the value of a utility's rate base (as opposed to reproduction cost or market
15 value). The Court's decision in *Bluefield* addressed both rate base and ROR.³⁸
16 Treatises on rate of return for public utilities, such as The Cost of Capital – A
17 Practitioner's Guide, agree that *Bluefield* lays out the four standards for a fair return:

18 1) *Comparable Earnings* – a utility is entitled to a return similar to
19 that being earned by other enterprises with similar risks, but not

³⁷ Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests, Docket No. 10-KCPE-415-RTS, November 22, 2010, 37-38.

³⁸ *Bluefield Water Works & Improvement Co. v. Pub. Svc. Comm'n of West Virginia*, 262 U.S. 679, 692-3 (1923).

1 as high as those earned by highly profitable or speculative
2 ventures;

3 2) *Financial Integrity* – a utility is entitled to a return level
4 reasonably sufficient to assure financial soundness;

5 3) *Capital Attraction* – a utility is entitled to a return sufficient to
6 support its credit and raise capital; and

7 4) *Changing Level of Returns* – a fair return can change along with
8 economic conditions and capital markets.³⁹

9 As a financial analyst formulating rate of return analyses for our state Commission, I
10 take from *Bluefield* that the Court requires a rate Order that allows a utility an
11 opportunity to earn a return consistent with the utility's risk profile and consistent with
12 observations in the capital markets. The Court's decision in *Hope*,⁴⁰ like that in
13 *Bluefield*, dealt with both valuation of rate base, as well as rate of return on that rate
14 base. With respect to the rate of return, the Court in *Hope* affirmed the four standards
15 set out in *Bluefield*.

³⁹ The Cost of Capital – A Practitioner's Guide by David C. Parcell, Prepared for the Society of Utility and Regulatory Financial Analysts, 1997, pp. 3-13 to 3-14.

⁴⁰ *Federal Power Comm'n. v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). "The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus, we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint."

Proxy Group of Natural Gas Distribution Companies

1 **Q. How did you select a proxy group for your cost of equity analysis?**

2 A. I began with the ten companies followed by Value-Line Investment Survey as natural
3 gas distribution companies and then applied the following filters: 1) consistent
4 dividends with no reductions during past six months, 2) investment grade bond rating,
5 3) positive projected earnings growth rate, and 4) at least 50% of revenues and assets
6 are directly associated with natural gas distribution. The proxy group candidates and
7 screening criteria appear on Schedule AHG-3. Of the ten companies that Value-Line
8 Investment Survey follows in the natural gas distribution sector, six companies meet
9 those four selection screens. The four that did not meet the criteria failed because they
10 earn less than 50% of their revenue from their natural gas distribution operations.

11 **Q. How does your proxy group compare to the group selected by Mr. McKenzie?**

12 A. Mr. McKenzie started with the same group of companies that are followed by Value-
13 Line Investment Survey. From that group he eliminated one company, UGI Corp.
14 because,"...it is primarily engaged in propane sales and marketing, which are not
15 directly comparable to Black Hills' distribution operations."⁴¹ Mr. McKenzie does not
16 provide what the threshold is for eliminating a UGI from the proxy group while
17 accepting other candidates that earn a majority of their revenues outside of the natural
18 gas distribution sector. I agree that UGI should not be in the proxy group. My analysis

⁴¹ Direct Testimony of Adrien M. McKenzie, Docket 21-BHCG-418-RTS, p.7.

revealed that Southwest Gas earns most of its revenue from utility infrastructure services. New Jersey Resources earns less than 40% of its revenues from natural gas distribution while earning more than 60% of its revenues from gas storage, transportation, energy services, and clean energy ventures. Chesapeake Utilities earns less than 50% of its revenues from its natural gas distribution operations and the rest from regulated electric utility operations, gas transmission, unregulated energy ventures, and propane sales. I eliminated these three companies because each one derives more than half of their revenue from industries outside of the traditional rate of return regulated natural gas distribution business. This diversity distinguishes each of them from Black Hills. The proxy group selection table is in Schedule AHG-3. The following table contains Staff's proxy group along with the same data for Black Hills Corporation as a point of reference.

Risk Profile Comparison of Proxy Group Members							
		Equity Ratio			Bond Rating Moody's/S&P	Value-Line	Beta Coef.
		Value-Line Forecasts				Financial	
		2021	2022	'24 - '26		Strength	
Atmos Energy, Corp.	ATO	52.0%	55.0%	60.0%	A1/A-	A+	0.80
NiSource, Inc.	NI	40.0%	40.0%	40.0%	Baa2/BBB+	B+	0.85
Northwest Natural	NWN	51.0%	53.5%	57.0%	Baa1/A+	A	0.85
ONE Gas, Inc.	OGS	36.0%	38.0%	53.0%	A3/BBB+	B++	0.80
South Jersey Industries	SJI	37.0%	37.0%	39.5%	Baa2/BBB+	B++	1.05
Spire, Inc.	SR	51.0%	51.0%	55.0%	Baa2/A-	B++	0.85
Black Hills Corp.	BKH	43.0%	48.5%	51.0%	Baa2/BBB+	A	1.00
Sources: Value-Line Investment Survey; S&P Market Intelligence							

Staff's Return on Equity Analysis

Q. How did you perform the cost of equity analysis?

1 A. I am using CAPM and DCF models applied to the proxy group. This methodology is
2 identical to that used in recent rate cases before the Commission.

3 **Q. Does the DCF model meet the legal standards discussed earlier in your testimony?**

4 A. Yes. A cost of equity estimate derived from the DCF model can meet the legal
5 standards discussed above if the model incorporates current information from the
6 capital markets via current stock prices and accurate data investors use to establish their
7 discount rate. This market-based information ensures that cost of equity estimates
8 evaluate investors' required rate of return or discount rate that reflects the current
9 economic environment.

10 The DCF model is a valuation model used by investors to value different types of
11 investments such as real estate, bonds, and equity securities. The DCF model is a useful
12 tool to value any investment that involves regular, periodic cash flows. The notion of
13 discounting a future receipt of cash back to the present so as to place a price or value
14 on an investment goes back centuries.⁴² The premise of the DCF model in the
15 valuation of common stock is that investors determine the value of a company's
16 common stock by discounting its future dividend payments back to the present. The
17 foundation of the DCF model is the process of discounting those future cash flows back
18 to the present at the investors' required return. An investor's required rate of return is
19 risk-sensitive and sensitive to the returns available on investments of comparable risk

⁴² The formal presentation of the DCF model as we use it today dates back to the 1930's in Irving Fisher's book: The Theory of Interest and John Burr Williams' 1938 text: The Theory of Investment Value. These two authors expressed the DCF model in modern economic terms.

1 throughout the global capital markets. In other words, as the risk of the investment
2 increases, so will the investors' required return. A higher required rate of return
3 decreases the present value of the stream of dividends that equates to the price of the
4 stock. So, all other variables being equal, investors price the riskier of two common
5 stocks lower because the cash flows or dividends are discounted back to the present at
6 a higher rate.

7 The form of the DCF model that regulatory agencies are accustomed to seeing is often
8 referred to as the Gordon Growth Model, which is a model that values the security at
9 the present value of a stream of cash flows (dividends) growing at a constant rate into
10 perpetuity. The basic form of this DCF equation is:

11
$$P_0 = \frac{D_0(1 + g)}{(K_e - g)}$$

12 where:

13 P_0 = the value of the common stock or asset

14 D_0 = the current dividend of the stock or annual cash flow from the asset

15 g = the annual growth rate of the dividend or cash flow forever

16 K_e = cost of equity or required rate of return for the stockholders

17 Or

18 $\text{Stock Price} = \text{Annual Dividend} / (\text{Req'd Rate of Return} - \text{Dividend Growth Rate})$

19 This is the form of the equation commonly found in texts regarding finance,
20 investments, and asset valuation. Such texts are inclusive of both theory and practical
21 application of the DCF model in utility regulatory settings.

22 Regulatory agencies responsible for setting rates and revenue requirements want to
23 know the investors' required rate of return, or K_e , in the equation. So, we solve the

1 equation for that variable. The equation below shows the algebraic isolation of the
2 investors' required rate of return. By isolating investors' required rate of return in the
3 equation, we can estimate it by knowing the stock's dividend yield and the annual
4 dividend growth rate expected by investors. That form of the equation is:

$$5 \quad Ke = \frac{D_0(1 + g)}{P_0} + g$$

6 This equation is frequently written out as:

$$\begin{aligned} 7 \quad & \text{Req'd Rate of Return} = (\text{Dividend/Current Stock Price}) + \text{Dividend Growth Rate} \\ 8 \quad & \text{or} \\ 9 \quad & \text{Required Rate of Return} = \text{Dividend Yield} + \text{Dividend Growth Rate} \end{aligned}$$

10 Or as commonly abbreviated by regulatory agencies

$$11 \quad Ke = y + g$$

12 Where: y = Dividend Yield

13 g = Expected Dividend Growth

14
15 Through a handful of inputs, the DCF model distills down to an equation, a complex
16 intellectual process performed by investors to arrive at a discount rate and valuation of
17 the security. As with any equation that attempts to model behavior, there are a host of
18 assumptions that come along with it. Those assumptions are:

- 19 • Ke corresponds only to the specific stream of future dividends, rather than
- 20 earnings, and that constitutes the source of value;
- 21 • The discount rate (Ke) must exceed the growth rate (g);
- 22 • The constant growth rate will continue for an indefinite future;
- 23 • Investors require the same discount rate (Ke) each year; and
- 24 • There is no external financing.

25 **Q. Why is it reasonable to accept these assumptions?**

26 **A.** The DCF model is attempting to emulate investors' behavior; distilling human behavior

1 into a handful of inputs demands simplifying assumptions. The question becomes
2 whether the assumptions are so contrary to investors' behavior in the real-world that
3 the model output becomes meaningless or illogical. I do not believe the assumptions
4 of the DCF model are contrary to investor behavior. Furthermore, I do not know of
5 any regulatory agency that has dismissed the DCF as being contrary to human behavior.
6 Moreover, there are methods I use to evaluate whether an output falls outside of the
7 realm of reasonableness. For example, the output can be compared with the returns
8 available on other investments such as long-term corporate bonds. There were no
9 observations eliminated using this screen.⁴³

Discounted Cash Flow Model

10 **Q. How did you calculate the dividend yield (y) component of the DCF model?**

11 A. The dividend yield (y) is the easier of the two components to measure as it is easily
12 observable in daily stock price reports. It is calculated by dividing the stock's annual
13 dividend payment per share by its market price per share.

14 **Q. What is the source of the dividend information?**

15 A. Historic and current dividend information is easily obtained from public subscription
16 services such as Value-Line and non-subscription services such as YahooFinance. The

⁴³ Staff applies this screen using the interest rates of Baa Utility Bonds and the yields on utility-specific debt shown in the Risk Premium Table. Staff adds 100 basis points to these yields as a minimum risk premium test. Cost of equity observations below this level are eliminated from the average. For the one year pricing period used in my analysis the "Baa" Utility Bond Yield was 3.26% + 1.00% minimum risk premium = 4.26% threshold. (see table on page 48 for "Baa" Utility Bond Yield)

1 DCF model requires a forward-looking dividend payment which is often the current
 2 year's dividend payment increased by the forecasted growth rate for next year. In lieu
 3 of forecasting, I obtained the 2022 forecasted dividend per share information from
 4 Value-Line Investment Survey. The Value-Line reports for each of the proxy
 5 companies are attached as Schedule AHG-4. I obtained the stock prices for the
 6 dividend yields from YahooFinance. For this analysis, I used weekly stock price
 7 observations taken from February 8, 2021, through August 2, 2021. The stock prices
 8 for each of the proxy companies appears on Schedule AHG-5. The following table
 9 contains the range dividend yields observed for the proxy group:

Dividend Yields Based on Prices from February 8, 2021, through August 2, 2021 21-BHCG-418-RTS							
		1	2	3	4	5	6
		DPS	Stock Prices			Dividend Yield	
		2022	Min	Max	Mean	Min	Max
Atmos Energy, Corp.	ATO	\$ 2.70	\$ 84.59	\$ 104.99	\$ 97.47	2.57%	3.19%
NiSource, Inc.	NI	\$ 0.92	\$ 21.11	\$ 26.60	\$ 24.55	3.46%	4.36%
Northwest Natural	NWN	\$ 1.93	\$ 45.28	\$ 56.75	\$ 52.55	3.40%	4.26%
ONE Gas, Inc.	OGS	\$ 2.48	\$ 66.77	\$ 81.90	\$ 75.23	3.03%	3.71%
South Jersey Industries	SJI	\$ 1.32	\$ 21.13	\$ 29.24	\$ 25.38	4.51%	6.25%
Spire, Inc.	SR	\$ 2.72	\$ 62.75	\$ 77.95	\$ 72.58	3.49%	4.33%
Range:						2.57%	6.25%
1) 2022 Dividends per Share Forecasted by Value-Line Investment Survey							
2) Minimum 6 month price observed from February 8, 2021 through August 2, 2021							
3) Maximum 6month price observed from February 8, 2021 through August 2, 2021							
4) Mean price of weekly high and low observations for the time period of February 8, 2021 through August 2, 2021							
5) Maximum dividend yield available from time period							
6) Minimum dividend yield available from time period							

Forecasted Growth Rates for the DCF Model

11 **Q. Please discuss the importance of the second component, the growth rate (g), in the**
 12 **DCF equation.**

1 A. The “g” represents the anticipated annual growth rate in cash-flows that investors
2 expect to receive through dividends from the stock. This is a challenging and
3 contentious issue in a DCF analysis for two reasons. First, it is a key element in the
4 DCF model or any form of a discounted cash flow analysis because the growth rate has
5 a one-for-one effect on the required return produced by the model. All other factors
6 being equal, a higher growth rate results in an equally higher return on equity for the
7 utility. Second, it is subjective due to the uncertainty about future earnings and
8 dividends, as well as the economy. As I discussed in an earlier section of my testimony,
9 the core disagreement with Mr. McKenzie’s ROE estimate is directly related to the data
10 he relies on to estimate growth.

11 **Q. How did you estimate the growth rate in the DCF model?**

12 A. I relied on a combination of short-term and long-term growth forecasts; the same
13 growth forecasts that investors apply to value common stocks. The appropriate growth
14 estimate to use in the DCF model is that which is expected by the market and factored
15 into investors’ analyses to estimate stock prices. Earnings per share growth forecasts
16 are commonly incorporated into the DCF model. Investment firms that publish growth
17 forecasts typically publish three to five-year annual growth estimates for earnings.
18 Value-Line Investment Survey also provides dividend growth rate forecasts; it is the
19 only firm that I am aware of that does so. Three to five years is as far into the future
20 as analysts forecast for a specific company. There are several sources for these
21 estimates. My analysis incorporates short-term forecasts published by Value-Line
22 Investment Survey; FactSet as reported through S&P Capital IQ; and Thomson-Reuters

1 (formerly known as Institutional Brokers Estimation Service or I/B/E/S) reported
2 through YahooFinance.

3 **Q. How do investors estimate the dividend growth rate beyond the three to five-year**
4 **horizon of the short-term growth forecasts?**

5 A. For the long-term perspective of potential growth, investors rely on forecasts of the
6 broad economy as measured by annual changes forecasted for the nation's gross
7 domestic product (GDP). There are sources for long-term growth estimates of this
8 country's GDP that extend out more than 20 years. Academic texts and investment
9 professionals use GDP forecasts as a forecast of potential long-term growth of
10 corporate dividend payments.

11 GDP refers to the market value of all final goods and services produced within a
12 country in a given period. Nominal GDP (nGDP) is that measure of goods and services
13 which includes effects of price changes - better known as inflation. Inflation must be
14 included for our forecast because the DCF analysis is interested in the nominal required
15 return. That is to say, investors' expectations of inflation are contained in their required
16 return. Keep in mind the "headline" GDP reported in the media is *real* GDP, which is
17 nGDP *less* the inflation experienced over the measurement period.

18 **Q. Is it a widely accepted practice in securities valuation to use nGDP growth**
19 **estimates in the DCF model?**

20 A. Yes, in the federal regulatory arena, similar to the responsibilities of the KCC, FERC

1 uses nGDP to estimate the cost of equity because it is consistent with investor behavior.
2 FERC has reviewed the issue of long-term growth estimates used in DCF models. It
3 took comments from stakeholders that included state commissions, customers,
4 investment bankers, and interstate pipeline companies.⁴⁴ Testimony from these parties
5 made it clear that long-term estimates of nGDP are a common component of valuation
6 analyses conducted by investment professionals. From that proceeding, FERC
7 concluded that long-term growth estimates of nGDP should be the estimate of long-
8 term growth in the DCF models used to estimate required returns for interstate pipeline
9 companies because that is consistent with investor behavior.⁴⁵ In June of 2014, FERC
10 concluded that the same methodology should be used in setting the required returns for
11 electric transmission companies.⁴⁶ Although the Commission has never explicitly
12 endorsed long-run nGDP growth as an input, it is clear that the growth estimate used
13 by Staff in the 15-116 Docket was considered credible by the Commission.⁴⁷

14 **Q. Is there academic support for this issue?**

15 A. Yes, academic research has shown that nGDP growth forecasts are an important input
16 to valuation studies because the analyst has to consider whether a company's annual
17 earnings can grow as fast as, or even faster than, the broad economy. In two of his
18 books devoted to the subject of asset valuation, Dr. Aswath Damodaran discusses the

⁴⁴ Transcript from Technical Conference held on January 23, 2008, FERC Docket PL07-2-000.

⁴⁵ Policy Statement, FERC Docket PL07-2-000 (April 17, 2008); FERC Opinion No. 486, FERC Docket RP04-274 (Oct. 19, 2006).

⁴⁶ Opinion No. 531, June 19, 2014, 147 FERC 61,234, para 36.

⁴⁷ Order issued September 10, 2015, Docket 15-KCPE-116-RTS, para. 34; p. 15-16.

1 nature of a stable growth rate for DCF models.⁴⁸ He argues for viewing nominal
2 economic growth as the absolute maximum when using a stable-growth model, such as
3 the DCF model we are using:

4 The stable growth rate cannot exceed the growth rate of the
5 economy in which a firm operates, but it can be lower. There is
6 nothing that prevents us from assuming that mature firms will
7 become a smaller part of the economy and it may, in fact, be the
8 more reasonable assumption to make. Note that the growth rate
9 of an economy reflects the contributions of both young, higher
10 growth firms and mature, stable growth firms. If the former
11 grow at a rate much higher than the growth rate of the economy,
12 the latter have to grow at a rate that is lower.⁴⁹

13 The growth rate of a company cannot be greater than that of the
14 economy but it can be less. Firms can become smaller over time
15 relative to the economy. Thus, even though the cap on the
16 growth rate may be the nominal growth rate of the economy,
17 analysts may use growth rates much lower than this value for
18 individual companies.⁵⁰

19 It is worth noting that Professor Damodaran cites the nGDP growth projection as a
20 *ceiling* for long-term growth in most valuation studies. Certainly, there are industries
21 that will exceed the average for a period of time, but even for those industries, rapid
22 growth cannot continue forever.

23 **Q. Does the view that nGDP growth is a ceiling on long-term earnings growth exist**
24 **outside of academia?**

⁴⁸ Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd Edition and
Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd Edition.

⁴⁹ Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd Edition, Aswath
Damodaran, p. 148.

⁵⁰ Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd Edition, Aswath
Damodaran, p.159.

1 A. Yes, valuation analysts carefully consider the long-run growth rates used to value assets
2 because using an incorrect growth estimate will lead to incorrectly valuing an asset.
3 Institutions directly involved in asset valuation and asset management that apply
4 valuation models to analyze potential acquisition and merger transactions recognize
5 that estimates of firm-specific growth are a driver to the value of an asset; overstating
6 growth would cause a model to overestimate the value of the asset which would result
7 in an economic loss to the investor. These experts also warn of a ceiling to earnings
8 growth rates as being no more than that of broad economic growth:

9 Growth rate: Few companies can be expected to grow faster than the
10 economy for long periods. The best estimate is probably the expected
11 long-term rate of consumption growth for the industry's products, plus
12 inflation.⁵¹

13 The following quote from J.P. Morgan Asset Management (JPMAM) addresses the
14 macro or economy-wide measures of profits. JPMAM's analysis is consistent with the
15 firm-specific view expressed by asset valuation experts. Analysts must be aware of
16 the forecasted growth rates applied in valuation models and how those growth forecasts
17 comport with broad measures of forecasted economic growth:

18 One common mistake is to assume that earnings and dividends received
19 by investors can grow in line with—or even in excess of—overall
20 economic growth (GDP) in perpetuity. Granted, it is almost a truism
21 that aggregate earnings must grow at the same pace as the overall
22 economy in the very long run; otherwise, profits would eventually
23 outstrip the size of the entire economy or dwindle to an insignificant
24 share of it. But not all of this earnings growth accrues to existing
25 shareholders. On the contrary, a large portion of economic growth
26 comes from the birth of new enterprises. Some commentators suggest

⁵¹ Valuation: Measuring and Managing the Value of Companies, Tim Koller, Mark Goedhart, and David Wessels, McKinsey & Co; 4th ed. P. 275.

1 (for example, Bernstein and Arnott, 2003; Cornell, 2010) that new
2 enterprises account for more than half of GDP growth in the U.S., while
3 in some rapidly developing economies new enterprises may account for
4 the lion's share of overall economic growth.⁵²

5 Both Peter L. Bernstein and Robert D. Arnott, referenced in the quote, have been
6 published in peer-reviewed academic journals and books on investment strategy, as
7 well as building careers in the field of asset management and investment strategy. Their
8 research suggests that relying on GDP as the long-run growth estimate could actually
9 be overly optimistic. Research by Bernstein and Arnott warns practitioners that a
10 portion of nGDP growth is created by new enterprises and that portion of nGDP growth
11 does not contribute to the earnings growth of existing enterprises.⁵³

12 Professional investment managers apply the same principles. JPMAM describes how
13 they arrive at their equity market assumptions:⁵⁴

14 Our framework begins with underlying economic activity—real GDP
15 growth plus inflation—which we believe ultimately drives earnings growth
16 in the long run.

17 Thus, it becomes clear that the linkage between expected economic growth and the
18 growth potential of corporate earnings and dividends is more than just an academic

⁵² Long-term Capital Market Return Assumptions: 2015 Estimates and Thinking Behind the Numbers, J.P. Morgan Asset Management, p. 25,

<https://am.jpmorgan.com/us/institutional/lcmra>

⁵³ Earnings Growth: The Two Percent Dilution, William J. Bernstein and Robert D. Arnot, Financial Analysts Journal, September/October 2003, pp 47-55.

⁵⁴ “Long-Term Capital Market Assumptions: 2014 Assumptions and the Thinking Behind the Numbers”; J.P. Morgan Asset Management, p. 50;

http://www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

1 principle in finance; professional money managers accept the relationship between
2 GDP growth and corporate earnings growth when forming their long-run forecasts.

3 **Q. Do you believe this evidence justifies incorporating long-run nGDP growth**
4 **forecasts into cost of equity analyses of utility companies?**

5 A. Yes, because we have to ascertain the discount rate investors apply to the future cash
6 flows from an investment in these utilities. Therefore, the Commission should emulate
7 investors' analytical practices as closely as possible to determine investors' discount
8 rate or required return. As noted above, investment professionals include a long-run
9 growth forecast for the general economy when applying the DCF and that measure of
10 macro-economic growth serves as the upper bounds of a firm-specific analysis.
11 Therefore, the Commission should consider the same information when estimating a
12 utility's required return.

13 **Q. How did you estimate long-run nominal GDP growth?**

14 A. I averaged the long-run nGDP forecasts of the Energy Information Agency (EIA), the
15 Congressional Budget Office (CBO), the Social Security Administration (SSA), and
16 ExxonMobile Corporation. The average of these forecasts composes the long-run
17 growth estimate in the DCF analysis.

Nominal GDP Estimates

Energy Information Agency (EIA) 2017 - 2050	4.45%
Congressional Budget Office Long-term Outlook	4.50%
Soc Sec Admin (SSA) OADSI Trustees Report 2020 - 2095	4.09%
Exxon-Mobile 2018 Outlook for Energy 2018 - 2040	4.40%
Average	4.36%

Sources:

EIA Annual Energy Outlook 2021

An Update to the Economic Outlook: 2021-2031; CBO, July 2021

OADSI Trustees Report Office of the Chief Actuary, Table V.B1-V.B2

ExxonMobile 2020 Outlook for Energy

1

DCF Results

2 **A. Please discuss the results of your DCF analysis.**

3 Q. The results of my DCF analysis appear in the following table. I have set out the
4 foundations for the DCF analysis in the previous pages, and in this section I will discuss
5 the specific information that I relied on for the DCF model and interpret the results.

Discounted Cash Flow Analysis 21-BHCG-418-RTS						
		1	2	3	4	5
		Dividend	Yields	Growth	DCF Estimated	
		Min	Max	Rate	Required Return	
Atmos Energy, Corp.	ATO	2.57%	3.19%	5.81%	8.38%	9.00%
NiSource, Inc.	NI	3.46%	4.36%	4.96%	8.42%	9.32%
Northwest Natural	NWN	3.40%	4.26%	3.68%	7.08%	7.94%
ONE Gas, Inc.	OGS	3.03%	3.71%	5.35%	8.37%	9.06%
South Jersey Industries	SJI	4.51%	6.25%	5.50%	10.01%	11.74%
Spire, Inc.	SR	3.49%	4.33%	5.66%	9.15%	9.99%
Average of each column					8.57%	9.51%
Average of all observations					9.04%	
1) Dividend divided by maximum price observed from February 8, 2021 through August 2, 2021						
2) Dividend divided by minimum price observed February 8, 2021 through August 2, 2021						
3) Forecasted growth						
4) Low-end estimate = col 1 + col 3						
5) High-end estimate = col 2 + col 3						

1

2 Pricing data was gathered from YahooFinance for each of the proxy companies from
3 the time period February 8, 2021, through August 2, 2021, on a weekly basis. The low
4 dividend yield is computed using the projected 2022 dividend divided by the average
5 of the weekly high prices while the high dividend yield is computed using the average
6 weekly low prices.

7 **Q. How did you arrive at a growth rate for each proxy company?**

8 A. The growth rate is the average of the short-term growth rates⁵⁵ and the long-run forecast
9 of nGDP of 4.36%. The following table summarizes all of the observed growth

⁵⁵ For each proxy company, I gathered three short-run, three to five-year growth forecasts for earnings and dividend from Value-Line Investment Survey; as well as analysts' earnings growth projections by Thomson Financial Network (I/B/E/S) reported by YahooFinance. I/B/E/S aggregates analysts' earnings forecasts and reports the mean of those estimates. FactSet is a service similar to I/B/E/S in that they aggregate analysts' forecasts and publishes the mean and median of estimates. FactSet data was obtained through S&P Global Market Intelligence.

1 forecasts, both historical and forecasted.

Growth Rate Summary 21-BHCG-418-RTS												
		Value-Line Historic Data				Forecasted Growth Rates						DCF
		Earnings Growth		Dividend Growth		Value Line		IBES	FactSet	Short-run	Long-term	Growth
		10 Year	5 Year	10 Year	5 Year	EPS	DPS	EPS	EPS	Average	nGDP	Rate
Atmos Energy, Corp.	ATO	8.00%	9.00%	5.00%	7.50%	7.00%	7.50%	7.17%	7.34%	7.25%	4.36%	5.81%
NiSource, Inc.	NI	2.00%	0.50%	-1.50%	-3.00%	9.50%	4.50%	3.52%	4.73%	5.56%	4.36%	4.96%
Northwest Natural	NWN	-1.50%	1.50%	1.50%	0.50%	5.50%	0.50%	5.50%	0.50%	3.00%	4.36%	3.68%
ONE Gas, Inc.	OGS		10.00%		14.50%	6.50%	7.00%	6.50%	5.33%	6.33%	4.36%	5.35%
South Jersey Industries	SJI	1.50%	-1.50%	6.50%	4.00%	11.50%	4.50%	4.80%	5.73%	6.63%	4.36%	5.50%
Spire, Inc.	SR	1.50%	4.50%	4.50%	6.00%	10.00%	4.50%	7.31%	6.00%	6.95%	4.36%	5.66%
	Min	-1.50%	-1.50%	-1.50%	-3.00%	5.50%	0.50%	3.52%	0.50%	3.00%		3.68%
	Max	8.00%	10.00%	6.50%	14.50%	11.50%	7.50%	7.31%	7.34%	7.25%		5.81%
	Mean	2.30%	4.00%	3.20%	4.92%	8.33%	4.75%	5.80%	4.94%	5.96%		5.16%

Columns: 1) - 6) Historic 5 & 10 Year & Forecasted 2024 - 2026 growth rates as reported by Value-Line in May 28, 2021

7) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gathered by Thomson-Reuters (aka I/B/E/S) and reported at YahooFinance on August 9, 2021

8) Long-term (3-5 year) forecasted annual earnings per share growth rate. Consensus forecasts gathered by FactSet and reported at S&P Global Market Intelligence (fka: SNL Financial) on August 9, 2021

9) Average of 3 to 5-year forecasted annual growth rates (columns 5 through 9).

10) Long-term forecasted nominal GDP growth rate

11) Average of short-term and long-term growth rates.

2

3 **Q. How is the long-run nGDP forecast applied in your DCF analysis?**

4 A. The long-run nGDP growth forecast of 4.36% is averaged with the short-run growth

5 forecasts. In my DCF analysis, I give equal weight to short-run and long-run growth

6 forecasts; the weighting is certainly debatable. At FERC, in both natural gas pipeline

7 and electric transmission rate cases, the short-run growth is afforded a three-quarters

8 weighting and the nGDP forecast a one-quarter weighting. Whatever the weighting an

9 analyst applies between the short-term and long-term growth forecasts, the analysis

10 needs to be constructed in a manner that distinguishes between the growth potential of

11 each time horizon.

Internal Rate of Return (IRR) Analysis

1 **Q. Please discuss the internal rate of return (IRR) analysis that you performed.**

2 A. An IRR analysis of an investment is a form of a DCF analysis, only with a more
3 complex equation than the Gordon Growth Model that we applied in the previous
4 section. In the IRR analysis, we are able to apply the five-year growth forecasts to only
5 the intended next five years of dividends, with the remaining years growing at the long-
6 run nGDP forecasted growth rate. In the age of spreadsheets, the IRR equation is not
7 that much harder to manage than the basic dividend yield plus growth DCF model, and
8 as the IRR model allows us to apply the growth forecasts to their respective forecast
9 periods, the IRR model provides important information to policy makers because it
10 recognizes the respective time spans of both the short-run (three to five-year earnings
11 growth) and long-run (nGDP growth rate) forecasts. The full output of the IRR
12 calculations appears in Schedule AHG-6; the following table summarizes the results.

Internal Rate of Return (IRR)		
21-BHCG-418-RTS		
Atmos Energy, Corp.		7.66%
NiSource, Inc.		8.60%
Northwest Natural		8.14%
ONE Gas, Inc.		8.18%
South Jersey Industries		10.56%
Spire, Inc.		8.82%
	Mean	8.66%
	Min	7.66%
	Max	10.56%

13

14 In the IRR model, short-term growth forecasts are given much less weight than in the

1 DCF analysis, five years of a several hundred year time horizon or five percent as
2 opposed to a weighting of 50 percent that I applied in the two-stage DCF model. As a
3 result of the greater weighting of the long-term growth estimate, the average for the
4 proxy group in the IRR analysis is 8.66% basis points lower than the two-stage DCF
5 results.

Capital Asset Pricing Model (CAPM) Analysis

6 **Q. Why do you incorporate a capital asset pricing model (CAPM) analysis in your**
7 **evaluation of Black Hills' cost of equity?**

8 A. The CAPM, like the DCF equation is one of the cornerstone financial and valuation
9 models. For example, every merger and acquisition analysis performed by an
10 investment banker involving a Kansas utility has incorporated a CAPM analysis as a
11 critical component of the valuation process. The CAPM is an important tool of finance
12 because it offers an explanation of the positive relationship between risk and ROR
13 required by investors.⁵⁶ It is appealing to regulators because it meets the legal standards
14 I discussed above as it can be structured to incorporate current data from the financial
15 markets and the unique risks of the utility in question to provide an estimate of the
16 return required by investors to take on risk above that of the risk-free return on U.S.
17 government bonds.

18
$$K_e = R_f + \text{Beta} (R_m - R_f) \text{ or}$$

⁵⁶ The theoretical support for the CAPM is the work done by Harry Markowitz ("Portfolio Selection," Journal of Finance, March, 1952). W.F. Sharpe added the concept of a risk-free rate of return to the Markowitz model ("A Simplified Model of Portfolio Analysis," Management Science, January, 1963).

1 $K_e = R_f + \text{Beta} (R_p)$

2 Where:

3 K_e = required return on equity

4 R_f = return on a risk-free security

5 R_m = an expected return from the market as a whole

6 R_p = risk premium available to investors through purchasing common stocks instead of risk-free securities often calculated as $R_m - R_f$

7 Beta = volatility of the security's or portfolio's return relative to the volatility of the market's return with the market beta equal to 1.0

10 **Rf**

11 The R_f estimate is the interest rate investors believe represents a riskless return.
12 Although it is a simple concept, the answer is not universally agreed upon. It is widely
13 accepted that a debt instrument issued by the U.S. Government is a risk-free instrument
14 so it is a question of what time horizon should an investor look at as a risk free vehicle.
15 An investment in U.S. Treasury Bonds is a risk-free investment, if the investor plans to
16 hold it until maturity in which case the investor is very certain to collect the interest
17 payments regardless of changes in the bond's price. My CAPM analyses looks at the
18 yields and returns of medium to long-term U.S. Treasury Bonds as representative of
19 risk-free to ultra-low risk investment returns available to investors. The risk-free
20 instrument chosen will have an effect on the results of the CAPM analysis. Whichever
21 instrument is selected, it should be used consistently in the equation.

22 **Beta**

23 The beta coefficient measures the volatility of the return earned by the utility's stock
24 relative to the volatility of the returns earned by the broader equity market. The broad
25 equity market is measured using the S&P 500 Index or similar broad index of equities.

1 This measure provides a look at the risk and volatility of a stock relative to other
2 investments. A stock with a beta of 1 is equally as volatile as the market as a whole.
3 A stock with a beta of 0.5 is half as volatile as the market. Value-Line reports that the
4 proxy group has a beta coefficient of 0.87 with a range of 0.80 to 1.05.

5 **Rm**

6 Rm is the expected return on the stock market as measured by a broad market index
7 such as the S&P 500. This represents the total return consisting of the price change of
8 the index plus dividends earned for the year. An expected market return can be
9 developed using historic or forecasted data; Staff's CAPM analyses look at both.

10 **Rp**

11 The risk premium is the difference between investors' expected return from the stock
12 market and their expected return from the risk-free investment. The risk premium is
13 written as $R_m - R_f$. The market return and the risk-free return should be taken from the
14 same time period so as to accurately measure the additional return required by investors
15 to take on the risk of common stocks over the risk-free investment over that forecasted
16 or historic time period. The risk premium is calculated from expected return on the
17 market (R_m) and the risk-free rate of return (R_f). There are also sources that provide
18 equity risk premium estimates.

19 **Q. Does the CAPM meet the Hope-Bluefield legal standards discussed earlier in your**
20 **testimony?**

1 A. Yes, a cost of equity estimate derived from the CAPM meets those legal standards if
2 the model incorporates current information from the capital markets that investors rely
3 on to evaluate investment options. This market-based information ensures the cost of
4 equity estimates evaluate investors' required rate of return or discount rate that reflects
5 the current economic environment. In the CAPM analysis, such information is the
6 expected returns in the broad equity market, the return available on risk free investment
7 vehicles and the beta coefficient.

8 **Q. Please discuss your CAPM analysis.**

9 A. I took two distinct approaches to the CAPM analysis that are commonly found in both
10 cost of capital studies in regulatory and asset-valuation arenas. The approaches are
11 distinct perspectives of the securities market and analysts use both approaches to make
12 investment decisions. One approach offers a perspective of capital costs using purely
13 historic measures of returns from the stock and bond markets. The second incorporates
14 forecasted returns on the broad equity market indexes and government fixed income
15 securities published by institutional investment services.

16 The difference in the two approaches highlights the difference in returns earned in the
17 past relative to the returns institutional investors expect going forward. The historic
18 returns on equity capital are drastically higher, 8.68% to 11.56%, compared to
19 forecasted returns of 6.25% to 8.28%. The institutional investment companies make it
20 clear that the reason to expect lower returns in future is that economic growth will be
21 lower than that experienced during the last century. That there are several sources for

1 the forecasted returns and none of those sources project returns for the future that are
2 anywhere near the level of the historic returns.

3 Both forms of my CAPM analysis incorporate the high and low beta coefficients
4 observed in the proxy group. The average beta of the proxy group is about 87% of that
5 exhibited by the broad equity market, clearly indicating that natural gas LDC
6 companies are viewed as much less volatile (and less risky) than the broad stock
7 market. Note that the beta of BHC is equal to that of the broad market.

21-BHCG-418-RTS Beta Coefficients		
Atmos Energy, Corp.	ATO	0.80
NiSource, Inc.	NI	0.85
Northwest Natural	NWN	0.85
ONE Gas, Inc.	OGS	0.80
South Jersey Industries	SJI	1.05
Spire, Inc.	SR	0.85
	Average	0.87
Black Hills Corp.	BKH	1.00

8

9 Staff filed cost of capital testimony in Docket 19-ATMG-525-RTS with data gathered
10 in late 2019, prior to the Covid-19 Pandemic and recession. It is noteworthy that the
11 turbulence in the stock market that occurred in the early months of the pandemic
12 resulted in significantly higher beta coefficients for the natural gas distribution
13 companies than was observed in the prior years. The proxy group for the 19-525 rate
14 case and this docket are the same with an increase in the average beta from 0.67 to 0.87.
15 Value-Line gathers market price data over a five year period to calculate a firm's beta
16 coefficient, so even though the market volatility was short-lived that data will remain

1 in the beta calculation for several more years. I believe it is important to rely on the
2 current beta coefficients as that reflects the market volatility that investors recently
3 experienced thus likely will continue to weigh on investors decision making. Not to
4 mention the fact that the underlying driver of the economic upheaval was the covid-19
5 virus, which remains uncontrolled.

6 **Q. Please describe your forecasted CAPM analyses.**

7 A. For the forecasted CAPM analyses, I obtained forecasts of long-run returns for common
8 equity and U.S. Treasury Bonds from three distinct sources: JPMAM; BlackRock
9 Investments (BlackRock); and Duff & Phelps. Combined, these three asset
10 management companies oversee more than \$8.5 trillion dollars with individual and
11 institutional clients worldwide. Thus, it is reasonable to assume their published
12 forecasts influence the expectations of investors beyond just their own client base.
13 JPMAM and BlackRock each annually publish their views of long-run (more than 15
14 years) returns available of numerous asset classes. Their respective forecasts are not
15 identical, and taken together, they provide a range for long-run returns on asset classes
16 by the largest asset management companies. As a third input of projected returns I
17 looked to Duff & Phelps which is a global provider of advisory services to the financial
18 industry and corporations.

19 **Q. How is JPMAM data applied to the CAPM analysis?**

20 A. For this CAPM analysis, we are interested in their forecasted returns on common stock
21 in the U.S. and U.S. Treasury Bonds published by JPMAM to establish the expected

1 return for the market. JPMAM publishes 10 to 15-year forecasts of expected returns on
2 dozens of investment asset classes in its annual publication, the Long Term Capital
3 Market Return Assumptions (LTCMRA).⁵⁷ JPMAM forecasts an annual return on
4 common stocks of 5.73%. JPMAM's forecasted returns on common stocks has
5 declined over the past four years; generally a product of the increase in stock prices.
6 Following the calculations and inputs through the CAPM equation in line 2 of the
7 following table, the forecasted return on a risk-free investment, 10-Year U.S. Treasury
8 Bonds, is subtracted from the expected return on common stocks resulting in a risk
9 premium of 4.19%. This risk premium is the additional return necessary to induce
10 investors to take on the added risk associated with common stocks over the risk-free
11 investment in a U.S. Treasury Bond. The beta coefficient is applied to the risk premium
12 to ascertain how much of a risk premium is necessary for investors to take on risks of
13 investing in utility stocks as opposed to the risk free U.S. Treasury Bond.

⁵⁷ J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2021 Edition, J.P. Morgan Asset Management (published October of 2020)
www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

**Capital Asset Pricing Model -- Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields**

		Low Beta	High Beta	Avg Beta
1) Forecasted Returns on Common Stocks		5.73%	5.73%	5.73%
2) Forecasted Total Return on 10-Year T-Bonds	-	1.54%	1.54%	1.54%
3) Equity Risk Premium		4.19%	4.19%	4.19%
4) Beta Coefficient	X	0.80	1.05	0.87
5) Beta Adjusted Risk Premium		3.35%	4.40%	3.65%
6) Forecasted Yield on 10-Year T-Bonds	+	3.00%	3.00%	3.00%
7) For Cost of Equity		6.35%	7.40%	6.65%

- 1) Forecasted 10 to 15-year annual arithmetic return on stocks
J.P. Morgan Asset Management, 2021 Edition.
- 2) Forecasted 10 to 15-year annual arithmetic return on intermediate term
U.S. Government bonds by J.P. Morgan Asset Management, 2021 Edition.
- 3) Resulting risk premium (1-2).
- 4) Beta coefficient range of proxy group reported by Value-Line.
- 5) Row 3 x Row 4 = asset specific risk premium.
- 6) Forecasted yield on 10-Year U.S. Treasury bonds forecasted by
J.P. Morgan Asset Management, 2021 Edition (page 71).
- 7) Forecasted cost of equity capital row 5 + row 6.

Sources:

J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions,
2021 Edition, J.P. Morgan Asset Management

1

2 The expected risk-free yield of 3.00% forecasted by JPMAM is added to the beta
3 specific risk premium to arrive at the cost of equity for the given beta coefficients of
4 0.80 and 1.05.

5 As you can see in the next table, a CAPM analysis that incorporates BlackRock's long-
6 term return projections are modestly higher than those published by JPMAM.

**Capital Asset Pricing Model -- Forecasted Risk Premium
Forecasted Market Returns & Treasury Bond Yields
by BlackRock Investments**

		Low Beta	High Beta	Avg Beta
1) Forecasted Returns on Common Stocks		7.30%	7.30%	7.30%
2) Forecasted Total Return on 10+ Year U.S. T-Bonds	-	2.30%	2.30%	2.30%
3) Equity Risk Premium		5.00%	5.00%	5.00%
4) Beta Coefficients of Proxy Group	x	0.80	1.05	0.87
5) Beta Adjusted Risk Premium		4.00%	5.25%	4.35%
6) Forecasted Yield on 10-Year T-Bonds	+	2.25%	2.25%	2.25%
7) Cost of Equity		6.25%	7.50%	6.60%

- 1) Forecasted 25-year annual geometric returns on U.S. common stocks (average of large and small capitalization)
- 2) Forecasted 25-year annual geometric return on intermediate term Treasury bonds
- 3) Resulting risk premium (1-2)
- 4) Beta coefficient range of proxy group reported by Value-Line.
- 5) Proxy Group risks premium
- 6) Forecasted yield on 10-Year U.S. Treasury bonds published in Survey of Professional Forecasters (Federal Reserve Bank of Philadelphia)
- 7) Forecasted cost of equity capital row 5 + row 6.

Sources:

<https://www.blackrockblog.com/blackrock-capital-markets-assumptions/>
<https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2018/survq118>

1

2 **Q. What is the third source of data used in the forward looking CAPM analyses?**

3 A. I relied on data published by Duff & Phelps, a global financial services company.
 4 Specific to cost of capital estimation, Duff & Phelps provides forward looking
 5 estimates of an equity risk premium (ERP) and a risk-free return. Just as in the previous
 6 CAPM equations, the ERP plus the risk-free return equate to the expected return on
 7 common stocks. Duff & Phelps develops its own forecast of the risk-free return. The
 8 beta coefficient of the particular asset (in this case the proxy group) is to the ERP and
 9 the product added to the risk-free rate of return. As capital markets change, Duff &
 10 Phelps changes its ERP and risk-free return estimates.

**Capital Asset Pricing Model -- Duff & Phelps' Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields**

		Low Beta	High Beta	Avg Beta
1) Duff & Phelps U.S. ERP		5.50%	5.50%	5.50%
2) Beta Coefficient	x	0.80	1.05	0.87
3) Proxy Group Risk Premium		4.40%	5.78%	4.79%
4) Duff & Phelps U.S. Risk-Free Rate of Return	+	2.50%	2.50%	2.50%
5) Proxy Group Cost of Equity		6.90%	8.28%	7.29%

- 1) Duff & Phelps U.S. Equity Risk Premium (effective December 31, 2018)
 2) Beta coefficient range of proxy group reported by Value-Line.
 3) Resulting risk premium for proxy group (1-2).
 4) Duff & Phelps U.S. Risk-Free Rate of Return (affirmed December 7, 2020)
 5) Forecasted Cost of Equity Range for Proxy Group

Sources:

Valuation Insights, First Quarter 2019, U.S. Equity Premium Recommendation;
 December 7 2020; Duff & Phelps
<https://www.duffandphelps.com>

1

2 These three capital asset pricing models vary with respect to the precise return each
 3 projects that is demanded by investors going forward. What is very apparent is that the
 4 models from all three of these sources project that returns on equity capital in the future
 5 will be lower than the historic returns. JPMAM's, BlackRock's, and Duff & Phelps'
 6 views of lower returns is virtually universally accepted across the investment banking
 7 and asset management industry.

8 **Q. Does the historic CAPM corroborate the findings of your forecasted CAPM**
 9 **analyses?**

10 A. No, the cost of equity or expected returns calculated using purely historical data are
 11 significantly greater than those found with the three scenarios using forecasted return.
 12 As I discussed earlier, market returns are forecasted to be lower in the future, reflecting
 13 the lower economic growth expected in the future. For the historical CAPM, I relied

1 on data of returns earned from 1928 through 2020. I prepared the historic perspective
2 in two unique views of historic average returns; arithmetic and geometric. The
3 arithmetic average returns are the mean or average of the returns; it is what is common
4 when people refer to an average. The geometric average is the compound return earned
5 over the time span in question; in this instance, 1928 through 2020. These two
6 measures of returns differ because of the volatility in annual returns on each of the asset
7 classes (common stocks and U.S. Treasury bonds). The greater the volatility in annual
8 growth, the greater the difference between arithmetic and geometric average for those
9 observations. In applying the CAPM, neither measure of returns reigns supreme as
10 countless academic papers have argued each side of the issue. Both methods offer a
11 perspective of historic returns; the arithmetic average is what has been representative
12 in a year, geometric average is the average change over a time span. Both averages are
13 widely reported or easily calculated from published, publicly available data.

**Capital Asset Pricing Model -- Historic Risk Premium
Based on Historic Arithmetic Risk Premiums
from 1928 to 2020**

	Low Beta	High Beta
1) Total Returns on Common Stocks	11.64%	11.64%
2) Total Return on Government Bonds	-	5.21%
3) Resulting Risk Premium	6.43%	6.43%
4) Beta Coefficient	x	0.80
5) Risk Premium	5.14%	6.75%
6) Historic Yield on Government Bonds	+	4.81%
7) Forecasted Cost of Equity Based on Historic Returns	9.95%	11.56%

- 1) Historic returns on common stocks 1928-2020
- 2) Historic returns on intermediate-term government bonds 1928-2020
- 3) Resulting risk premium (1-2)
- 4) Beta coefficient of the proxy group (Reported by Value-Line)
- 5) Row 3 x Row 4 = Asset Specific Risk Premium
- 6) Historic year-end yield on intermediate-term government bonds 1928-2020
- 7) Forecasted cost of equity capital, row 5 + row 6

Sources: Damodaran Online

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html
& Value-Line Investment Survey.

1

**Capital Asset Pricing Model -- Historic Risk Premium
Based on Geometric Historic Risk Premiums
from 1928 to 2020**

	Low Beta	High Beta
1) Total Returns on Common Stocks	9.79%	9.79%
2) Total Return on Government Bonds	-	4.95%
3) Resulting Risk Premium	4.84%	4.84%
4) Beta Coefficient	x	0.80
5) Risk Premium	3.87%	5.08%
6) Historic Yield on Government Bonds	+	4.81%
7) Forecasted Cost of Equity Based on Historic Returns	8.68%	9.89%

- 1) Historic returns on common stocks 1928-2020
- 2) Historic returns on intermediate-term government bonds 1928-2020
- 3) Resulting risk premium (1-2)
- 4) Beta coefficient of the proxy group (Reported by Value-Line)
- 5) Row 3 x Row 4 = Asset Specific Risk Premium
- 6) Historic year-end yield on intermediate-term government bonds 1928-2020
- 7) Forecasted cost of equity capital, row 5 + row 6

Sources: Damodaran Online

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html
& Value-Line Investment Survey.

2

3 If we rely on purely historic data, regardless of whether it is based on arithmetic or

1 geometric returns, we have to assume that certain trends, particularly economic growth,
2 observed in the past 90 years will continue in the future. It is well established that the
3 U.S. economy is projected to grow at a slower rate than that experienced in the past.
4 The projected growth rate is 4.36% over the next 30 years compared to the historic
5 growth rate of 6.11%.⁵⁸ Beyond the change in economic growth there is some issue
6 with measurement of those historic returns. There is evidence that these frequently-
7 quoted historic returns do not present a complete picture in part due to the beginning
8 period that is often used in the calculation.⁵⁹ The simple step of beginning the
9 measurement period in 1920's brings questions as to whether the time period is
10 representative of all of the modern-era securities trading. Regardless of whether the
11 1920s is an appropriate point to begin measuring historic returns, historic returns are
12 widely reported and frequently referred to in discussions of capital markets and
13 potential returns. There are well regarded financial publications that focus solely on
14 this era of historic data and how to apply it in cost of capital studies. Thus,
15 measurements from this time period influence expectations despite warnings that
16 surround historic economic growth rates and market returns. I agree that the historic

Nominal GDP

2018 \$	20,580.20
1929 \$	104.60

Growth Rate **6.11%**

Source: www.bea.gov
Bureau of Economic Analysis

⁵⁸

⁵⁹ McQuarrie, Edward F, "The Myth of 1926: How Much Do We Know Long-Term Returns on U.S. Stocks?" The Journal of Investing; Winter 2009, p. 96.

1 data is often cited and is part of the cost of capital universe, but it has significant
2 limitations and policy makers should give it only light consideration in their final
3 decision.

4 **Q. Does that conclude your testimony?**

5 A. Yes, thank you.

Schedule AHG-1
21-BHCG-418-RTS

Comparison of Staff Recommendations in Recent Gas LDC Dockets

	14-BHCG-502-RTS			16-ATMG-079-RTS		16-KGSG-491-RTS		18-KGSG-560-RTS		19-ATMG-525-RTS		21-BHCG-418-RTS	
Discounted Cash Flow Models:		8.79%		8.42%		7.74%		8.47%		8.15%		9.04%	
	Results Range	7.42%	10.18%	7.19%	10.08%	6.68%	9.02%	8.18%	8.76%	7.76%	8.54%	8.57%	9.51%
Internal Rate of Return (multi-stage DCF):		8.37%		8.01%		7.38%		7.65%		7.78%		8.66%	
												7.66%	10.56%
Capital Asset Pricing Models:													
	Historic			9.77%		9.28%		9.03%		9.26%		10.02%	
	Forecasted	8.50%	9.50%	8.17%	8.54%	7.90%		5.82%	6.40%	6.50%	7.72%	6.50%	7.72%
<u>Staff Recommendation</u>		9.00%											
	ROE	8.50%	9.50%	9.10%		8.75%		9.15% / 9.25%		9.10%		9.20%	
	ROR	6.72%		7.70%		6.59%		6.81% / 6.86%		7.02%		6.25%	
Interest Rates Observed During Study Period:													
	30 Year Treasury Yields	3.26%		2.99%		2.64%		2.99%		2.84%		1.88%	
	A/A Rated Utility Bond Yields	4.07%		4.37%		4.03%		4.10%		4.05%		2.99%	
	BBB/Baa Rated Utility Bond Yields	4.45%		4.79%		4.57%		4.41%		4.43%		3.26%	
	Applicant's Bond Yield to Maturity			4.41%		4.11%		4.06%		3.94%		3.33%	
Risk Premiums Provided by Staff's ROE:													
	30 Year Treasury Yields	5.74%		6.11%		6.11%		6.26%		6.26%		7.32%	
	A/A Rated Utility Bond Yields	4.93%		4.73%		4.72%		5.15%		5.05%		6.21%	
	BBB/Baa Rated Utility Bond Yields	4.55%		4.31%		4.18%		4.84%		4.67%		5.94%	
	Applicant's Bond Yield to Maturity			4.69%		4.64%		5.19%		5.16%		5.87%	

Sources:

Direct Testimony of Adam H. Gatewood, 14-BHCG-502-RTS, filed 09/12/2014; pp. 5, 14, 13, 16
Direct Testimony of Adam H. Gatewood, 16-ATMG-079-RTS, filed 12/21/2015; pp.13, 41, 42, 53, & 54
Direct Testimony of Adam H. Gatewood, 16-KGSG-491-RTS, filed 9/7/2016; pp. 3, 50, 52, 56, 61, & 62
Direct Testimony of Adam H. Gatewood, 18-KGSG-560-RTS, filed 10/29/2018; pp. 41, 45, 64, 72, & 73
Direct Testimony of Adam H. Gatewood, 18-ATMG-525-RTS, filed 10/31/2019; pp. 3, 5, 6, 29, 34
Direct Testimony of Adam H. Gatewood, 21-BHCG-418-RTS

**BLACK HILLS / KANSAS GAS UTILITY COMPANY, LLC
d/b/a BLACK HILLS ENERGY
DOCKET NO. 21-BHCG-418-RTS
KANSAS CORPORATION COMMISSION
DATA REQUEST NO. KCC-181 - SUPPLEMENTAL**

DATE OF REQUEST: 07/15/2021
DATE RESPONSE DUE: 07/26/2021
REQUESTOR: Kansas Corporation Commission
AUDITOR: Gatewood
ANSWERED BY: Rachel Schuldt
DATE RESPONDED: 08/04/21
SUBJECT:
REFERENCE: Update of Section 7 to June 30, 2021

REQUEST:

Update Section 7 schedules that were filed in the Application to reflect balances and costs at June 30, 2021.

SUPPLEMENTAL RESPONSE:

Please see the attached file for Section 7 schedules updated with information from the June 2021 financial close.

ATTACHMENTS:

Attachment KCC-181 Supplemental Section 7.xlsx

Verification of Response

I have read the foregoing information request and answer(s) thereto and find the answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this information request.

Signed: /s/ Rob Daniel

Date: August 4, 2021

Schedule AHG-2
21-BHCG-418-RTS

BLACK HILLS/KANSAS GAS UTILITY COMPANY, LLC
CAPITALIZATION AND REQUESTED RATE OF RETURN
AS OF 12/31/2019 AND 12/31/2020 AND 6/30/2021

SECTION 7
SCHEDULE 1
PAGE 1 OF 1
KCC-181

<u>LNE NO.</u>		<u>TOTAL COMPANY CAPITALIZATION</u> (COL.1) \$	<u>CAPITAL-IZATION PERCENT</u> (COL.2) %	<u>ASSIGNED TO KANSAS RATE BASE</u> (COL.3) \$	<u>WEIGHTED AVERAGE COST OF CAPITAL</u> (COL.4) %	<u>REQUESTED RATE OF RETURN</u> (COL.5) %
	<u>12/31/2019</u>					
001	LONG TERM DEBT	82,000,000	50.82	87,015,589	4.33	2.20
002	PREFERRED STOCK EQUITY	0	0.00	0	0.00	0.00
<u>003</u>	<u>COMMON STOCK EQUITY</u>	<u>79,364,337</u>	<u>49.18</u>	<u>84,207,529</u>	<u>10.15</u>	<u>4.99</u>
<u>004</u>	<u>TOTAL CAPITALIZATION</u>	<u>161,364,337</u>	<u>100.00</u>	<u>171,223,118</u>		<u>7.19</u>
	<u>12/31/2020</u>					
001	LONG TERM DEBT	108,000,000	49.66	114,385,741	3.91	1.94
002	PREFERRED STOCK EQUITY	0	0.00	0	0.00	0.00
<u>003</u>	<u>COMMON STOCK EQUITY</u>	<u>109,469,149</u>	<u>50.34</u>	<u>115,952,038</u>	<u>10.15</u>	<u>5.11</u>
<u>004</u>	<u>TOTAL CAPITALIZATION</u>	<u>217,469,149</u>	<u>100.00</u>	<u>230,337,779</u>		<u>7.05</u>
	<u>6/30/2021</u>					
001	LONG TERM DEBT	113,000,000	49.74		3.91	1.94
002	PREFERRED STOCK EQUITY	0	0.00		0.00	0.00
<u>003</u>	<u>COMMON STOCK EQUITY</u>	<u>114,186,061</u>	<u>50.26</u>		<u>10.15</u>	<u>5.10</u>
<u>004</u>	<u>TOTAL CAPITALIZATION</u>	<u>227,186,061</u>	<u>100.00</u>			<u>7.05</u>

Schedule AHG-2
21-BHCG-418-RTS

BLACK HILLS/KANSAS GAS UTILITY COMPANY, LLC
COST OF EACH ISSUE OF DEBT - LONG TERM DEBT

SECTION 7
SCHEDULE 2
PAGE 1 OF 2
KCC-181

<u>LINE</u> <u>NO.</u>		<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021 (Note 1)</u>
001	Interest on LTD	3,317,700	3,398,917	3,490,883	4,000,018	2,468,583

(Note 1) Interest Expense for the first 6 months of 2021

Schedule AHG-2
21-BHCG-418-RTS

BLACK HILLS/KANSAS GAS UTILITY COMPANY, LLC
 COST OF EACH ISSUE OF DEBT
 AS OF 6/30/2021

SECTION 7
 SCHEDULE 2
 PAGE 2 OF 2
 KCC-181

LINE NO.	SERIES	DATE OF ISSUANCE (COL.1)	DATE OF MATURITY (COL.2)	PRINCIPAL AMOUNT (COL.3)	DISCOUNT (COL.4)	GROSS PROCEEDS (COL.5)	INTEREST RATE (COL.6)	DFC RATE (COL.7)	COST OF MONEY (COL.8)
001	BHC \$525M Notes Due 2023	11/19/2013	11/30/2023	525,000,000	2,467,500	522,532,500	4.31%	0.09%	4.40%
002	BHC \$300M Notes Due 2026	1/13/2016	1/15/2026	300,000,000	909,000	299,091,000	3.99%	0.10%	4.08%
003	BHC \$300M Notes Due 2046	8/19/2016	9/15/2046	300,000,000	1,635,000	298,365,000	4.23%	0.14%	4.37%
004	BHC \$400M Notes Due 2027	8/19/2016	1/15/2027	400,000,000	204,000	399,796,000	3.16%	1.00%	4.15%
005	BHC \$400M Notes Dues 2033	8/17/2018	5/1/2033	400,000,000	1,828,000	398,172,000	4.39%	0.12%	4.51%
006	BHC \$400M Notes Due 2029	10/3/2019	10/15/2029	400,000,000	1,376,000	398,624,000	3.09%	0.09%	3.18%
007	BHC \$300M Notes Due 2049	10/3/2019	10/15/2049	300,000,000	585,000	299,415,000	3.89%	0.10%	3.98%
008	BHC \$400M Notes Due 2030	6/17/2020	6/15/2030	400,000,000	1,368,000	398,632,000	2.54%	0.09%	2.63%
Long-Term Debt at BHC				3,025,000,000					118,270,000
Weighted Average Cost of BHC Debt									<u>3.91%</u>
Debt Allocated to Black Hills Kansas Gas				\$113,000,000					\$4,418,300

Schedule AHG-2
21-BHCG-418-RTS

BLACK HILLS CORPORATION

CAPITAL STRUCTURE
(Thousands of Dollars)

SECTION 7
SCHEDULE 4
PAGE 1 OF 1
KCC-181

LINE NO.	CAPITALIZATION AND LIABILITIES	12/31/2019 (COL.1)	12/31/2020 (COL.2)	6/30/2021 (COL.3)
001	COMMON SHAREHOLDERS' EQUITY	2,362,123	2,561,385	2,659,040
002	PREFERENCE STOCK, NOT MANDATORILY REDEEMABLE	0	0	0
003	PREFERENCE STOCK, CONVERTIBLE AND MANDATORILY REDEEM	0	0	0
004	PREFERENCE STOCK OF SUBSIDIARY, RETRACTABLE	0	0	0
<u>005</u>	LONG-TERM DEBT	<u>3,140,096</u>	<u>3,528,100</u>	<u>3,530,216</u>
006	TOTAL CAPITALIZATION	5,502,219	6,089,485	6,189,256
007	SHORT-TERM DEBT, INCLUDING CURRENT MATURITIES	461,794	462,493	400,678
<u>008</u>	OTHER CURRENT LIABILITIES	<u>349,500</u>	<u>234,040</u>	<u>829,850</u>
009	TOTAL CURRENT LIABILITIES	811,294	696,533	1,230,528
<u>010</u>	DEFERRED CREDITS	<u>1,142,998</u>	<u>1,201,506</u>	<u>1,218,414</u>
<u>011</u>	TOTAL CAPITALIZATION AND LIABILITIES	<u>7,456,511</u>	<u>7,987,524</u>	<u>8,638,198</u>

**BLACK HILLS / KANSAS GAS UTILITY COMPANY, LLC
d/b/a BLACK HILLS ENERGY
DOCKET NO. 21-BHCG-418-RTS
KANSAS CORPORATION COMMISSION
DATA REQUEST NO. KCC-182 - SUPPLEMENTAL**

DATE OF REQUEST: 07/15/2021
DATE RESPONSE DUE: 07/26/2021
REQUESTOR: Kansas Corporation Commission
AUDITOR: Adam Gatewood
ANSWERED BY: Rachel Schuldt
DATE RESPONDED: 08/04/2021
SUBJECT:
REFERENCE: Section 7 Update to reflect BHC consolidated capitalization and cost of debt

REQUEST:

Update Section 7 schedules to reflect the capital balances of Black Hills Corporation and its cost of long-term debt to include the embedded costs of BHC Senior Unsecured Notes, South Dakota Electric, Wyoming Electric, and any other long-term debt in the consolidated capital structure of Black Hills Corporation. In essence, this data request is seeking the embedded cost of debt and capitalization ratios for Black Hills Corporation on a consolidated basis. Balances and costs as of June 30, 2021.

SUPPLEMENTAL RESPONSE:

Please see the attached file, which includes all long-term debt as requested above.

ATTACHMENTS:

Attachment KCC-182 Supplemental Section 7 LTD.xlsx

Verification of Response

I have read the foregoing information request and answer(s) thereto and find the answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this information request.

Signed: /s/ Rob Daniel

Date: August 4, 2021

Schedule AHG-2
21-BHCG-418-RTS

Attachment KCC-182 SUPP.1

BLACK HILLS/KANSAS GAS UTILITY COMPANY, LLC
 COST OF EACH ISSUE OF DEBT
 AS OF 6/30/2021

SECTION 7
 SCHEDULE 2
 PAGE 2 OF 2
 KCC-182

LINE NO.	SERIES	DATE OF ISSUANCE (COL.1)	DATE OF MATURITY (COL.2)	PRINCIPAL AMOUNT (COL.3)	DISCOUNT (COL.4)	GROSS PROCEEDS (COL.5)	INTEREST RATE (COL.6)
001	BHC \$525M Notes Due 2023	11/19/2013	11/30/2023	525,000,000	2,467,500	522,532,500	4.31%
002	BHC \$300M Notes Due 2026	1/13/2016	1/15/2026	300,000,000	909,000	299,091,000	3.99%
003	BHC \$300M Notes Due 2046	8/19/2016	9/15/2046	300,000,000	1,635,000	298,365,000	4.23%
004	BHC \$400M Notes Due 2027	8/19/2016	1/15/2027	400,000,000	204,000	399,796,000	3.16%
005	BHC \$400M Notes Dues 2033	8/17/2018	5/1/2033	400,000,000	1,828,000	398,172,000	4.39%
006	BHC \$400M Notes Due 2029	10/3/2019	10/15/2029	400,000,000	1,376,000	398,624,000	3.09%
007	BHC \$300M Notes Due 2049	10/3/2019	10/15/2049	300,000,000	585,000	299,415,000	3.89%
008	BHC \$400M Notes Due 2030	6/17/2020	6/15/2030	400,000,000	1,368,000	398,632,000	2.54%
009	CLFP Series 2007 \$110M Notes due 2037	11/20/2007	11/20/2037	110,000,000	-	110,000,000	6.67%
010	CLFP Series 2009A \$10M Notes due 2027 ^(a)	9/3/2009	3/1/2027	10,000,000	-	10,000,000	0.08%
011	CLFP Series 2009B \$7M Notes due 2021 ^(a)	9/3/2009	9/1/2021	7,000,000	-	7,000,000	0.08%
012	CLFP Series 2014 \$75M Notes due 2044	10/1/2014	10/20/2044	75,000,000	-	75,000,000	4.53%
013	BHP First Mortgage Bonds due 2044	10/1/2014	10/20/2044	85,000,000	-	85,000,000	4.43%
014	BHP First Mortgage Bonds due 2032	8/13/2002	8/15/2032	75,000,000	-	75,000,000	7.23%
015	BHP First Mortgage Bonds due 2039	10/27/2009	11/1/2039	180,000,000	-	180,000,000	6.12%
Long-Term Debt at BHC				3,567,000,000		3,556,627,500	4.01%
						3,539,627,500	4.03%

^(a) Variable rate bond. Interest Rate is as of June 30, 2021

Schedule AHG-3
21-BHCG-418-RTS

KCC Staff Proxy Group Selection
21-BHCG-418-RTS

1	2	3 5 Years of Data	4 Dividends No Reductions	5 Ratings Moody's	6 S&P	7 Gas Dist. Rev	8 Bus. % Assets	9 Pos. EPS Growth
Black Hills Corp	BKH	✓	✓	Baa2	BBB+	57%	54%	✓
✓ Atmos Energy	ATO	✓	✓	A1	A-	93%	95%	✓
X Chesapeake Utilities	CPK	✓	✓			46%	50%	✓
X New Jersey Resources	NJR	✓	✓	A1		37%	63%	✓
✓ NiSource, Inc.	NI	✓	✓	Baa2	BBB+	67%	61%	✓
✓ Northwest Natural	NWN	✓	✓	Baa1	A+	98%	96%	✓
✓ ONE Gas, Inc.	OGS	✓	✓	A3	BBB+	100%	100%	✓
✓ South Jersey Industries	SJI	✓	✓			56%	91%	✓
X Southwest Gas	SWX	✓	✓	Baa2	BBB+	41%	83%	✓
✓ Spire Inc.	SR	✓	✓	Baa2	A-	94%	82%	✓
X UGI Corp.	UGI	✓	✓			16%	27%	✓

✓ Pass

X Fail

- 1 Publicly traded natural gas distribution companies followed by Value-Line Investment Survey
- 2 Stock ticker symbol
- 3 5 Years of Data Five years of financial data and no recent announcements of a merger or asset divestiture
- 4 Dividends No Reductions No dividend reductions in past five years
- 5 & 6 Bond Ratings by Moody's and S&P Bond ratings by Moody's and S&P, proxy group is Baa1/BBB- and above
- 7 & 8 Gas Dist. Rev. and Assets Natural gas distribution segment revenues and assets as a portion of total company in 2020
- 9 Positive EPS Growth Positive forecasted earnings per share growth

Sources: Value-Line Investment Survey; S&P Global Market Intelligence

A number of stocks in *Value Line's* Natural Gas Utility Industry have strengthened nicely in price since our last report three months ago. It appears these movements are attributable, to a certain extent, to improved earnings of late, compared to last year's figures. Indeed, the economic environment in the United States is brightening, as state and local governments are easing COVID-related restrictions on businesses and individuals due to declining infection rates (reflecting, no doubt, the ongoing administration of vaccines).

But we're not out of the woods yet as far as the coronavirus is concerned. Notably, new variants of the virus have been detected in certain parts of the nation. And, if infection rates return to alarming levels, there might be pressure on customer demand and a rise in bad-debt expense plus other operating costs. However, companies are seeking regulatory relief to help offset COVID-19-related effects. It should also be stated that this industry is considered essential to the nation's infrastructure, so operations have stayed open.

Even at current, elevated quotations we see standouts in our group for capital appreciation potential out to 2024-2026. Consider, also, that there are some good selections for the 18-month period. And, not to be ignored are these equities' reliable, healthy amounts of dividend income, unlike a number of companies in other energy-related sectors, which have slashed or even suspended their payouts during the pandemic.

Winter Storm Uri

The severe weather event swept through the country's midsection (including Texas, Oklahoma, and New Mexico) in February, killing dozens of people. Furthermore, companies with exposure to the affected territories, like *Atmos Energy*, experienced unprecedented market pricing for natural gas costs, resulting in exorbitant gas purchases during that month. To help pay for those expenses, some firms issued large quantities of debt. Even so, they are working with regulators to recover these costs via future rate filings. Interestingly, the powerful storm created robust business conditions for energy marketing & trading units owned by such firms as *Spire Inc.* and *New Jersey Resources*.

Appealing Dividends

The primary attraction of utility equities is their payouts, which tend to be adequately covered by corporate earnings. (It's worth mentioning that the Financial Strength ratings for half of the 10 companies in our category are at least an A, and the lowest is a respectable B+.) At the time of this industry report, the average yield for the group was 3.3%, compared to the *Value Line* median of 1.7%. Outstanding selections include *South Jersey Industries*, *Northwest Natural Holding Co.*, *Spire Inc.*, and *Southwest Gas Holdings*. When the financial markets experience heightened volatility (which seems to be more often the case these days), solid dividend yields provide a measure of much-needed stability.

Outlook For 2024-2026

We are optimistic, in general, about the industry's

INDUSTRY TIMELINESS: 53 (of 97)

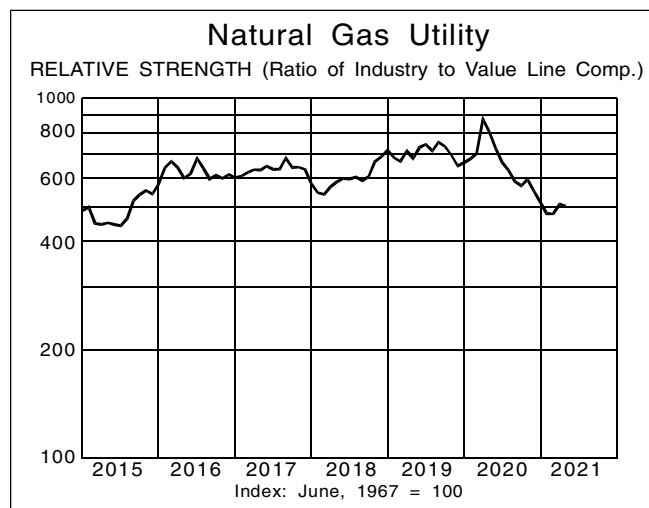
long-term operating performance. Natural gas should continue to be an abundant resource in the United States, made possible partially by new technologies, so a shortage does not seem probable in the years ahead. (Presently, it's estimated that roughly half of all domestic households use that energy source.) Too, there are limited alternatives for the services the companies in this category offer. Furthermore, it's a challenge for new entrants in the market, given such factors as the size of existing competitors and the substantial initial capital outlays that are required. Lastly, the country's population, now numbering more than 330 million, should stay on a steady, upward trajectory, which augurs well for future demand for utility services.

Nonetheless, there are risks to take under consideration. For a start, companies are subject to the regulatory authorities. That being the case, there are no guarantees that petitions for rate increases will be accepted or that certain favorable provisions (which include temperature-adjusted rate mechanisms) will continue indefinitely. To further complicate matters, a slowdown in the economy may prompt customers to conserve natural gas and push up bad-debt expense. Lastly, operational difficulties created by leaks and other unfortunate events might well result in significant financial losses if not sufficiently covered by insurance.

Conclusion

With the exception of *Chesapeake Utilities*, the stocks in our category don't stand out for Timeliness. Still, they ought to draw the attention of income-minded investors with a conservative orientation, since those good-yielding issues possess high grades for Price Stability, and most are ranked 1 (Highest) or 2 (Above Average) for Safety. And, as stated above, there are some good choices for price performance in the 18-month period and out to 2024-2026. As always, our subscribers are advised to carefully examine the following reports before making a commitment.

Frederick L. Harris, III



NISOURCE INC. NYSE-NI					RECENT PRICE	25.45	P/E RATIO	18.2	(Trailing: 19.1 Median: 21.0)	RELATIVE P/E RATIO	0.84	DIV'D YLD	3.5%	VALUE LINE	Target Price Range				
TIMELINESS	3	Raised 5/7/21	High: 18.0	24.0	26.2	33.5	44.9	49.2	26.9	27.8	28.1	30.7	30.5	26.6		2024	2025	2026	
SAFETY	3	Lowered 3/19/21	Low: 14.1	17.7	22.3	24.8	32.1	16.0	19.0	21.7	22.4	24.7	19.6	21.1					
TECHNICAL	5	Lowered 4/2/21	<div>LEGENDS</div> <div>0.50 x Dividends p sh divided by Interest Rate</div> <div>..... Relative Price Strength</div> <div>Options: Yes</div> <div>Shaded area indicates recession</div>																
BETA	.85	(1.00 = Market)																	
18-Month Target Price Range																			
Low-High																			
Midpoint (% to Mid)																			
\$19-\$40																			
\$30 (15%)																			
2024-26 PROJECTIONS																			
Price																			
Gain																			
Ann'l Total Return																			
High																			
Low																			
50																			
35																			
(+95%)																			
(+40%)																			
21%																			
12%																			
Institutional Decisions																			
2020																			
3020																			
4020																			
to Buy																			
212																			
200																			
to Sell																			
218																			
202																			
Hld's(000)																			
342381																			
361290																			
359962																			
Percent shares traded																			
30																			
20																			
10																			

[illegible]

The shares of ONE Gas, Inc. began trading "regular-way" on the New York Stock Exchange on February 3, 2014. That happened as a result of the separation of ONEOK's natural gas distribution operation. Regarding the details of the spinoff, on January 31, 2014, ONEOK distributed one share of OGS common stock for every four shares of ONEOK common stock held by ONEOK shareholders of record as of the close of business on January 21. It should be mentioned that ONEOK did not retain any ownership interest in the new company.

[illegible]

	1979	1978	1977
(SMILL.)			
Cash Assets	17.9	8.0	704.9
Other	<u>488.3</u>	<u>531.9</u>	<u>453.8</u>
Current Assets	506.2	539.9	1158.7
Accts Payable	120.5	152.3	228.0
Debt Due	516.5	418.2	447.0
Other	<u>235.7</u>	<u>226.6</u>	<u>204.0</u>
Current Liab.	872.7	797.1	879.0
Fix. Cha. Cov.	567%	587%	595%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	--	-1.0%	6.0%
"Cash Flow"	--	8.0%	8.0%
Earnings	--	10.0%	6.5%
Dividends	--	14.5%	7.0%
Book Value	--	3.0%	10.5%

Cal- endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2018	638.5	292.5	238.3	464.4	1633.7
2019	661.0	290.6	248.6	452.5	1652.7
2020	528.2	273.3	244.6	484.2	1530.3
2021	625.3	320	257	472.7	1675
2022	650	355	300	505	1810

Cal- endar	EARNINGS PER SHARE ^A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2018	1.72	.39	.31	.83	3.25
2019	1.76	.46	.33	.96	3.51
2020	1.72	.48	.39	1.09	3.68
2021	1.79	.51	.42	1.08	3.80
2022	1.85	.55	.47	1.13	4.00

Calendar	QUARTERLY DIVIDENDS PAID ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2017	.42	.42	.42	.42	1.68
2018	.46	.46	.46	.46	1.84
2019	.50	.50	.50	.50	2.00
2020	.54	.54	.54	.54	2.16
2021	.58	.58			

2011	2012	2013	2014	2015	2016	2017	2018
--	--	--	34.92	29.62	27.30	29.43	31.06
--	--	--	4.52	4.82	5.43	5.96	6.32
--	--	--	2.07	2.24	2.65	3.02	3.25
--	--	--	.84	1.20	1.40	1.68	1.84
--	--	--	5.70	5.63	5.91	6.81	7.50
--	--	--	34.45	35.24	36.12	37.47	38.86
--	--	--	52.08	52.26	52.28	52.31	52.57
--	--	--	17.8	19.8	22.7	23.5	23.1
--	--	--	.94	1.00	1.19	1.18	1.25
--	--	--	2.3%	2.7%	2.3%	2.4%	2.5%
--	--	--	1818.9	1547.7	1427.2	1539.6	1633.7
--	--	--	109.8	119.0	140.1	159.9	172.2
--	--	--	38.4%	38.0%	37.8%	36.4%	23.7%
--	--	--	6.0%	7.7%	9.8%	10.4%	10.5%
--	--	--	40.1%	39.5%	38.7%	37.8%	38.6%
--	--	--	59.9%	60.5%	61.3%	62.2%	61.4%
--	--	--	2995.3	3042.9	3080.7	3153.5	3328.7
--	--	--	3293.7	3511.9	3731.6	4007.6	4283.7
--	--	--	4.4%	4.7%	5.2%	5.8%	5.9%
--	--	--	6.1%	6.5%	7.4%	8.2%	8.4%
--	--	--	6.1%	6.5%	7.4%	8.2%	8.4%
--	--	--	3.7%	3.1%	3.5%	3.7%	3.7%
--	--	--	40%	53%	52%	55%	56%

BUSINESS: ONE Gas, Inc. provides natural gas distribution services to more than two million customers. There are three divisions: Oklahoma Natural Gas, Kansas Gas Service, and Texas Gas Service. The company purchased 153 Bcf of natural gas supply in 2020, compared to 174 Bcf in 2019. Total volumes delivered by customer (fiscal 2020): transportation, 58.3%; residential, 31.7%; commercial

ONE Gas' bottom line exhibited some improvement in the opening quarter of 2021. Share net of \$1.79 was 4% higher than the prior-year total of \$1.72. That partially reflected benefits from new rates, primarily in Texas and Oklahoma. Another contributing factor was an expanded customer base in Oklahoma and Texas. The effective income tax rate decreased, as well. The company adds that there was only a small number of outages across the service area despite the severe storm that occurred there in February (see below for more details). Although the effects of the coronavirus have continued, we believe that full-year earnings will increase around 3%, to \$3.80 a share. Assuming further growth of operating margins in 2022, share net might advance another 5%, to \$4.00.

Winter Storm Uri prompted leadership to take certain actions. Given that event, ONE Gas experienced unprecedented market pricing for gas costs in its Kansas, Oklahoma, and Texas territories, which resulted in aggregated natural gas purchases for February of approximately \$2.1 billion. To pay for these expenses, the

	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
	31.32	28.78	31.30	33.85	Revenues per sh	43.00
	6.96	7.36	7.75	8.20	"Cash Flow" per sh	9.75
	3.51	3.68	3.80	4.00	Earnings per sh ^A	5.00
	2.00	2.16	2.32	2.48	Div'ds Decl'd per sh ^B	2.95
	7.91	8.87	9.00	9.20	Cap'l Spending per sh	9.75
	40.35	42.01	44.40	48.45	Book Value per sh	74.40
	52.77	53.17	53.50	53.50	Common Shs Outst'g ^C	57.00
	25.3	21.7	<i>Bold figures are Value Line estimates</i>		Avg Ann'l P/E Ratio	25.0
	1.35	1.11			Relative P/E Ratio	1.40
	2.3%	2.7%			Avg Ann'l Div'd Yield	2.4%
	1652.7	1530.3	1675	1810	Revenues (\$mill)	2450
	186.7	196.4	205	215	Net Profit (\$mill)	285
	18.7%	17.5%	17.0%	17.5%	Income Tax Rate	22.0%
	11.3%	12.8%	12.2%	11.9%	Net Profit Margin	11.6%
	37.7%	41.5%	64.0%	62.0%	Long-Term Debt Ratio	47.0%
	62.3%	58.5%	36.0%	38.0%	Common Equity Ratio	53.0%
	3415.5	3815.7	6600	6820	Total Capital (\$mill)	8000
	4565.2	4867.1	5100	5330	Net Plant (\$mill)	6000
	6.4%	6.0%	5.0%	5.0%	Return on Total Cap'l	5.0%
	8.8%	8.8%	8.5%	8.5%	Return on Shr. Equity	6.5%
	8.8%	8.8%	8.5%	8.5%	Return on Com Equity	6.5%
	3.8%	3.7%	3.5%	3.0%	Retained to Com Eq	3.0%
	56%	58%	61%	62%	All Div'ds to Net Prof	59%

& industrial, 9.4%; other, .6%. ONE Gas has around 3,600 employees. BlackRock owns 11.9% of common stock; The Vanguard Group, 9.7%; American Century Investment, 7.6%; officers and directors, 1.9% (4/21 Proxy). CEO: Pierce H. Norton II. Incorporated: Oklahoma. Address: 15 East Fifth Street, Tulsa, Oklahoma 74103. Tel.: 918-947-7000. Internet: www.onegas.com.

company issued \$1 billion of 0.85 percent senior notes due 2023, \$700 million of 1.10 percent senior notes due 2024, and \$800 million of floating-rate senior notes due 2023. It should also be stated that ONE Gas seeks to recover those costs through future rate filings. Still, since the balance sheet is now more leveraged, we lowered the Financial Strength rating one notch, to B++.

Business prospects over the 2024-2026 span seem promising. The company remains the leading natural gas distributor (as measured by customer count) in both Oklahoma and Kansas, and holds the number-three position in Texas. Moreover, these markets seem to have decent growth possibilities and are located in one of the most active drilling regions in the United States. Also, ONE Gas seems capable of satisfying its working capital requirements, capital expenditures, and other commitments for a while.

These shares, although just an Average (3) selection for Timeliness, possess solid long-term total return potential.

Frederick L. Harris, III *May 28, 2021*

(A) Diluted EPS. Excludes nonrecurring gain: 2017, \$0.06. Next earnings report due early Aug. Quarterly EPS for 2018 don't add up due to rounding.

(B) Dividends historically paid in early March, June, Sept., and Dec. ■ Dividend reinvestment plan. Direct stock purchase plan.
(C) In millions.

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Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	80
Earnings Predictability	100

To subscribe call 1-800-VALUELINE

SPIRE INC. NYSE-SR

RECENT PRICE **74.48** P/E RATIO **14.6** (Trailing: 25.9 Median: 19.0) RELATIVE P/E RATIO **0.67** DIV'D YLD **3.6%**

VALUE LINE

TIMELINESS **3** Raised 5/21/21
SAFETY **2** Raised 6/20/03
TECHNICAL **2** Raised 5/28/21
BETA .85 (1.00 = Market)High: 37.8 42.8 44.0 48.5 55.2 61.0 71.2 82.9 81.1 88.0 88.0 77.9
Low: 30.8 32.9 36.5 37.4 44.0 49.1 57.1 62.3 60.1 71.7 50.6 59.3
LEGENDS
0.35 x Dividends p sh
divided by Interest Rate
..... Relative Price Strength
Options: Yes
Shaded area indicates recession

18-Month Target Price Range

Low-High Midpoint (% to Mid)
\$37-\$92 \$65 (-15%)

2024-26 PROJECTIONS

Price Gain Ann'l Total
High 130 (+75%) 18%
Low 95 (+30%) 10%

Institutional Decisions

2020 3020 4020
to Buy 127 145 131
to Sell 130 121 148
Hld's(000) 40679 40642 41028Percent shares traded
18
12
6

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

75.43 93.51 93.40 100.44 85.49 77.83 71.48 49.90 31.10 37.68 45.59 33.68 36.07 38.78 38.30 35.96 42.85 36.90
2.98 3.81 3.87 4.22 4.56 4.11 4.62 4.58 3.12 3.87 6.15 6.16 6.54 7.55 7.12 5.25 9.10 8.55
1.90 2.37 2.31 2.64 2.92 2.43 2.86 2.79 2.02 2.35 3.16 3.24 3.43 4.33 3.52 1.44 5.00 4.30
1.37 1.40 1.45 1.49 1.53 1.57 1.61 1.66 1.70 1.76 1.84 1.96 2.10 2.25 2.37 2.49 2.60 2.72
2.84 2.97 2.72 2.57 2.36 2.56 3.02 4.83 4.00 3.96 6.68 6.42 9.08 9.86 16.15 12.37 11.25 10.85
17.31 18.85 19.79 22.12 23.32 24.02 25.56 26.67 32.00 34.93 36.30 38.73 41.26 44.51 45.14 44.19 54.40 56.25
21.17 21.36 21.65 21.99 22.17 22.29 22.43 22.55 32.70 43.18 43.36 45.65 48.26 50.67 50.97 51.60 52.50 53.50
16.2 13.6 14.2 14.3 13.4 13.7 13.0 14.5 21.3 19.8 16.5 19.6 19.8 16.7 22.8 NMF 7.4 75.2
.86 .73 .75 .86 .89 .87 .82 .92 1.20 1.04 .83 1.03 1.00 .90 1.21 NMF 15.3 56.1
4.4% 4.3% 4.4% 3.9% 3.9% 4.7% 4.3% 4.1% 4.0% 3.8% 3.5% 3.1% 3.1% 3.0% 3.4% 3.4% 38.2 103.5© VALUE LINE PUB. LLC 24-26
Revenues per sh ^A 58.20
"Cash Flow" per sh 10.50
Earnings per sh ^{A B} 5.50
Div'ds Decl'd per sh ^C 3.10
Cap'l Spending per sh 11.45
Book Value per sh ^D 75.00
Common Shs Outst'g ^E 55.00
Avg Ann'l P/E Ratio 20.5
Relative P/E Ratio 1.15
Avg Ann'l Div'd Yield 2.8%

CAPITAL STRUCTURE as of 3/31/21

Total Debt \$3456.8 mill. Due in 5 Yrs \$1690.0 mill.
LT Debt \$2692.5 mill. LT Interest \$130.0 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized Annual rentals \$8.8 mill.

Pension Assets-9/20 \$897.9 mill.

Oblig. \$1401.3 mill.

Pfd Stock \$242.0 mill. Pfd Div'd \$14.8 mill.

Common Stock 51,679,561 shs.

as of 4/30/21

MARKET CAP: \$3.8 billion (Mid Cap)

CURRENT POSITION 2019 2020 3/31/21

(SMILL.)

Cash Assets 5.8 4.1 104.0

Other 608.7 586.5 936.0

Current Assets 614.5 590.6 1040.0

Accts Payable 301.5 243.3 352.1

Debt Due 783.2 708.4 764.3

Other 384.1 497.5 391.1

Current Liab. 1468.8 1449.2 1507.5

Fix. Chg. Cov. 272% 373% 385%

ANNUAL RATES Past Past Est'd '18-'20

of change (per sh) 10 Yrs. 5 Yrs. to '24-'26

Revenues -8.0% - - 7.5%

"Cash Flow" 4.5% 8.5% 8.0%

Earnings 1.5% 4.5% 10.0%

Dividends 4.5% 6.0% 4.5%

Book Value 7.0% 5.5% 9.0%

Fiscal Year Ends QUARTERLY REVENUES (\$ mill.)^A Full Fiscal Year

Dec.31 Mar.31 Jun.30 Sep.30

2018 561.8 813.4 350.6 239.2 1965.0

2019 602.0 803.5 321.3 225.6 1952.4

2020 566.9 715.5 321.1 251.9 1855.4

2021 512.6 1104.9 377.5 255 2250

2022 530 803 376 266 1975

Fiscal Year Ends EARNINGS PER SHARE ^{A B F} Full Fiscal Year

Dec.31 Mar.31 Jun.30 Sep.30

2018 2.39 2.03 .52 d.51 4.33

2019 1.32 3.04 d.09 d.74 3.52

2020 1.24 2.54 d1.87 d.45 1.44

2021 1.65 3.55 .48 d.68 5.00

2022 1.75 2.74 .45 d.64 4.30

Cal-endar QUARTERLY DIVIDENDS PAID ^C Full Year

Mar.31 Jun.30 Sep.30 Dec.31

2017 .525 .525 .525 .525 2.10

2018 .5625 .5625 .5625 .5625 2.25

2019 .5925 .5925 .5925 .5925 2.37

2020 .6225 .6225 .6225 .6225 2.49

2021 .65 .65

BUSINESS: Spire Inc., formerly known as the Laclede Group, Inc., is a holding company for natural gas utilities, which distributes natural gas across Missouri, including the cities of St. Louis and Kansas City, Alabama, and Mississippi. Has roughly 1.7 million customers. Acquired Missouri Gas 9/13, Alabama Gas Co 9/14. Utility terms sold and transported in fiscal 2020: 3.3 bill. Revenue mix for regulated operations: residential, 68%; commercial and industrial, 22%; transportation, 6%; other, 4%. Has about 3,583 employees. Officers and directors own 3.0% of common shares; BlackRock, 12.0% (1/21 proxy). Chairman: Edward Glotzbach; CEO: Suzanne Sitherwood, Inc.: Missouri. Address: 700 Market Street, St. Louis, Missouri 63101. Tel.: 314-342-0500. Internet: www.spireenergy.com.

Spire registered impressive numbers during the first half of fiscal 2021 (concludes September 30th). Share net of \$5.20 surged around 38%, compared to the prior-year total of \$3.78. This was made possible partially by the Gas Utility division, helped by increased Infrastructure System Replacement Surcharge (ISRS) revenues, the effects of colder temperatures, plus diminished operating costs. Moreover, favorable market conditions, especially in February when Winter Storm Uri struck parts of the U.S., drove the performance of the Gas Marketing unit. Given that the company faces an easy bottom-line comparison in the third quarter, it appears that full-year share net will jump nearly 3.5 times, to \$5.00, versus the uninspiring fiscal 2020 tally of \$1.44 (which was crushed by the impact of COVID-19). Turning to next year, we expect lower, though still respectable, earnings of \$4.30 a share, since the second-quarter matchup will be challenging.

Value Line is optimistic about the company's prospects over the 2024-2026 period. The gas utilities boast 1.7 million customers in Mississippi, Alabama,

and Missouri, providing a measure of regional diversity. Furthermore, the other operations, particularly pipelines, hold promise. Additional expansionary projects and technological enhancements in customer service and elsewhere ought to assist Spire, too. Finally, the balance sheet (see below) is healthy.

The Financial Strength rating resides at B++. When March ended, there was around \$675 million of available liquidity partly via a revolving credit facility. Too, long-term debt was a manageable 49.6% of total capital, and short-term commitments did not seem to be a major hurdle. So, the company ought to be able to meet its various obligations (including interest payments, capital expenditures, and dividends) with relative ease. Acquisitions are also plausible.

These good-quality shares have risen greatly in value in recent months. It appears that Spire's strong results of late are a driving force behind that movement. Also, long-term total return potential is solid. Meanwhile, the stock is neutrally ranked for Timeliness.

Frederick L. Harris, III

May 28, 2021

(A) Fiscal year ends Sept. 30th. (B) Based on diluted shares outstanding. Excludes nonrecurring loss: '06, 7c. Excludes gain from discontinued operations: '08, 94c. Next earnings report due late July. (C) Dividends paid in early January, April, July, and October. (D) Dividend reinvestment plan available. (E) Incl. deferred charges. In '20: \$1,171.6 mill., \$22.71/sh.

(F) Qlty. egs. may not sum due to rounding or change in shares outstanding.

Company's Financial Strength B++
Stock's Price Stability 90
Price Growth Persistence 55
Earnings Predictability 50

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BLACK HILLS CORP. NYSE-BKH					RECENT PRICE	66.81		P/E RATIO	17.1 (Trailing: 18.2 Median: 18.0)		RELATIVE P/E RATIO	0.86		DIV'D YLD	3.5%		VALUE LINE	
TIMELINESS	4	Lowered 4/16/21	High: 34.5	34.8	37.0	55.1	62.1	53.4	64.6	72.0	68.2	82.0	87.1	71.3			Target Price Range	
SAFETY	2	Raised 5/1/15	Low: 25.7	25.8	30.3	36.9	47.1	36.8	44.7	57.0	50.5	60.8	48.1	58.2			2024 2025 2026	
TECHNICAL	3	Lowered 6/18/21	LEGENDS 0.77 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession															
BETA	1.00	(1.00 = Market)																
18-Month Target Price Range																		
Low-High	Midpoint (% to Mid)																	
\$46-\$101 \$74 (10%)																		
2024-26 PROJECTIONS																		
High	Price	Gain	Ann'l Total															
Low	95	(+40%)	12%															
	70	(+5%)	5%															
Institutional Decisions																		
	302020	402020	102021															
to Buy	130	130	132															
to Sell	136	142	141															
Hld's(000)	53467	53730	54420															
			Percent shares traded															
			30															
			20															
			10															

Schedule AHG-5
21-BHCG-418-RTS

Atmos Energy Corp (ATO)			
Date	High	Low	Close
2/8/2021	\$92.13	\$88.28	\$91.05
2/15/2021	\$94.30	\$90.28	\$93.56
2/22/2021	\$91.92	\$84.59	\$84.61
3/1/2021	\$92.64	\$85.59	\$91.71
3/8/2021	\$92.22	\$89.06	\$91.42
3/15/2021	\$94.90	\$91.61	\$94.09
3/22/2021	\$97.43	\$92.00	\$97.24
3/29/2021	\$99.25	\$96.95	\$98.24
4/5/2021	\$99.42	\$97.26	\$99.13
4/12/2021	\$102.15	\$98.74	\$101.82
4/19/2021	\$104.99	\$101.24	\$103.35
4/26/2021	\$103.71	\$100.24	\$103.59
5/3/2021	\$104.79	\$101.08	\$103.00
5/10/2021	\$104.76	\$98.32	\$100.46
5/17/2021	\$100.56	\$96.84	\$98.18
5/24/2021	\$99.77	\$97.17	\$99.17
5/31/2021	\$101.67	\$98.79	\$100.71
6/7/2021	\$101.79	\$99.80	\$101.79
6/14/2021	\$101.84	\$97.67	\$97.88
6/21/2021	\$99.51	\$96.74	\$98.93
6/28/2021	\$99.06	\$95.60	\$97.11
7/5/2021	\$98.63	\$95.21	\$98.53
7/12/2021	\$101.76	\$97.89	\$101.24
7/19/2021	\$101.33	\$97.50	\$99.45
7/26/2021	\$101.40	\$98.22	\$98.59
8/2/2021	\$101.90	\$98.07	\$100.89
Minimum		\$84.59	\$84.61
Maximum	\$104.99		\$103.59
Mean	\$97.47		\$97.91
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-5
21-BHCG-418-RTS

NiSource Inc. (NI)			
Date	High	Low	Close
2/8/2021	\$22.89	\$22.04	\$22.53
2/15/2021	\$23.23	\$22.07	\$22.84
2/22/2021	\$22.90	\$21.54	\$21.60
3/1/2021	\$22.24	\$21.11	\$21.86
3/8/2021	\$22.74	\$21.79	\$22.55
3/15/2021	\$24.00	\$22.58	\$23.69
3/22/2021	\$24.46	\$23.14	\$23.80
3/29/2021	\$24.28	\$23.72	\$24.07
4/5/2021	\$24.94	\$24.11	\$24.71
4/12/2021	\$25.91	\$23.48	\$25.62
4/19/2021	\$26.30	\$25.51	\$25.72
4/26/2021	\$26.02	\$25.40	\$26.02
5/3/2021	\$26.24	\$25.55	\$25.98
5/10/2021	\$26.60	\$25.23	\$25.75
5/17/2021	\$25.82	\$24.84	\$25.42
5/24/2021	\$25.76	\$25.21	\$25.50
5/31/2021	\$25.68	\$25.32	\$25.49
6/7/2021	\$26.03	\$25.20	\$26.01
6/14/2021	\$26.38	\$24.96	\$25.02
6/21/2021	\$25.48	\$24.66	\$25.10
6/28/2021	\$25.29	\$24.34	\$24.83
7/5/2021	\$25.17	\$24.41	\$25.14
7/12/2021	\$25.93	\$24.74	\$25.75
7/19/2021	\$25.77	\$24.62	\$25.21
7/26/2021	\$25.68	\$24.62	\$24.77
8/2/2021	\$25.71	\$24.79	\$25.40
Minimum		\$21.11	\$21.60
Maximum	\$26.60		\$26.02
Mean	\$24.55		\$24.63
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-5
21-BHCG-418-RTS

Northwest Natural Co (NWN)			
Date	High	Low	Close
2/8/2021	\$47.50	\$45.28	\$46.32
2/15/2021	\$49.28	\$45.87	\$48.88
2/22/2021	\$50.18	\$47.27	\$47.99
3/1/2021	\$51.85	\$46.77	\$51.71
3/8/2021	\$54.12	\$51.42	\$53.22
3/15/2021	\$54.27	\$50.30	\$52.96
3/22/2021	\$53.94	\$49.25	\$52.63
3/29/2021	\$54.25	\$52.28	\$53.07
4/5/2021	\$54.66	\$52.95	\$54.40
4/12/2021	\$55.86	\$53.80	\$55.48
4/19/2021	\$56.75	\$54.77	\$55.26
4/26/2021	\$55.54	\$53.21	\$53.92
5/3/2021	\$55.36	\$53.03	\$55.09
5/10/2021	\$56.11	\$52.93	\$54.67
5/17/2021	\$54.73	\$52.71	\$53.07
5/24/2021	\$53.78	\$52.50	\$52.88
5/31/2021	\$54.34	\$52.59	\$53.77
6/7/2021	\$55.29	\$53.72	\$55.23
6/14/2021	\$55.70	\$52.07	\$52.17
6/21/2021	\$53.63	\$51.37	\$53.35
6/28/2021	\$53.60	\$52.10	\$52.53
7/5/2021	\$52.61	\$50.93	\$52.00
7/12/2021	\$53.75	\$51.63	\$52.89
7/19/2021	\$53.29	\$50.83	\$51.95
7/26/2021	\$54.01	\$52.00	\$52.29
8/2/2021	\$54.48	\$52.40	\$53.43
Minimum		\$45.28	\$46.32
Maximum	\$56.75		\$55.48
Mean	\$52.55		\$52.74
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-5
21-BHCG-418-RTS

ONE Gas, Inc. (OGS)			
Date	High	Low	Close
2/8/2021	\$74.15	\$71.24	\$72.69
2/15/2021	\$74.55	\$72.05	\$74.06
2/22/2021	\$73.48	\$66.77	\$66.97
3/1/2021	\$73.72	\$67.29	\$73.60
3/8/2021	\$75.37	\$72.93	\$75.13
3/15/2021	\$77.70	\$73.39	\$74.74
3/22/2021	\$76.01	\$71.86	\$74.99
3/29/2021	\$77.26	\$74.65	\$76.81
4/5/2021	\$78.33	\$76.74	\$77.99
4/12/2021	\$81.06	\$77.55	\$80.62
4/19/2021	\$81.90	\$80.07	\$81.26
4/26/2021	\$81.48	\$78.28	\$80.47
5/3/2021	\$81.55	\$77.07	\$78.39
5/10/2021	\$79.64	\$75.21	\$75.80
5/17/2021	\$75.64	\$72.50	\$74.01
5/24/2021	\$75.51	\$73.43	\$74.32
5/31/2021	\$75.75	\$73.90	\$75.21
6/7/2021	\$77.92	\$74.98	\$77.52
6/14/2021	\$78.96	\$74.60	\$74.64
6/21/2021	\$75.93	\$73.19	\$75.49
6/28/2021	\$76.18	\$74.03	\$74.50
7/5/2021	\$74.34	\$72.51	\$72.94
7/12/2021	\$75.54	\$72.30	\$74.63
7/19/2021	\$74.61	\$72.01	\$73.93
7/26/2021	\$75.93	\$73.36	\$73.78
8/2/2021	\$75.32	\$72.42	\$74.25
Minimum		\$66.77	\$66.97
Maximum	\$81.90		\$81.26
Mean	\$75.23		\$75.34
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-5
21-BHCG-418-RTS

So. Jersey Industries, Inc. (SJI)			
Date	High	Low	Close
2/8/2021	\$23.92	\$22.59	\$23.66
2/15/2021	\$24.39	\$23.45	\$24.26
2/22/2021	\$26.50	\$24.06	\$25.11
3/1/2021	\$27.14	\$24.92	\$26.68
3/8/2021	\$29.24	\$26.55	\$27.93
3/15/2021	\$28.64	\$21.13	\$22.57
3/22/2021	\$22.98	\$22.00	\$22.25
3/29/2021	\$23.23	\$22.21	\$23.06
4/5/2021	\$24.71	\$22.89	\$24.62
4/12/2021	\$24.88	\$24.01	\$24.65
4/19/2021	\$25.34	\$24.26	\$24.92
4/26/2021	\$25.47	\$24.10	\$24.75
5/3/2021	\$25.84	\$24.60	\$25.77
5/10/2021	\$26.07	\$24.75	\$25.75
5/17/2021	\$26.29	\$25.33	\$26.10
5/24/2021	\$26.87	\$25.88	\$26.66
5/31/2021	\$27.66	\$26.59	\$27.41
6/7/2021	\$27.98	\$27.38	\$27.94
6/14/2021	\$27.99	\$26.00	\$26.14
6/21/2021	\$26.95	\$26.14	\$26.85
6/28/2021	\$26.90	\$25.62	\$26.28
7/5/2021	\$26.44	\$25.70	\$26.38
7/12/2021	\$26.72	\$25.52	\$25.56
7/19/2021	\$25.59	\$24.52	\$25.56
7/26/2021	\$26.19	\$25.01	\$25.17
8/2/2021	\$25.91	\$24.46	\$25.33
Minimum		\$21.13	\$22.25
Maximum	\$29.24		\$27.94
Mean	\$25.38		\$25.44
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-5
21-BHCG-418-RTS

Spire, Inc. (SR)			
Date	High	Low	Close
2/8/2021	\$65.61	\$62.75	\$63.97
2/15/2021	\$68.29	\$63.63	\$67.67
2/22/2021	\$69.39	\$66.22	\$66.42
3/1/2021	\$71.78	\$65.79	\$70.92
3/8/2021	\$75.47	\$69.54	\$75.13
3/15/2021	\$75.78	\$72.91	\$73.74
3/22/2021	\$74.12	\$71.18	\$74.05
3/29/2021	\$74.50	\$72.69	\$73.37
4/5/2021	\$76.46	\$72.70	\$76.16
4/12/2021	\$77.95	\$75.68	\$77.26
4/19/2021	\$77.85	\$76.12	\$76.37
4/26/2021	\$76.52	\$74.24	\$75.34
5/3/2021	\$77.20	\$74.58	\$75.89
5/10/2021	\$77.87	\$73.81	\$75.47
5/17/2021	\$75.25	\$72.23	\$72.74
5/24/2021	\$73.57	\$71.48	\$71.66
5/31/2021	\$73.04	\$71.52	\$72.07
6/7/2021	\$75.69	\$71.85	\$75.69
6/14/2021	\$76.85	\$72.50	\$72.52
6/21/2021	\$75.04	\$69.77	\$73.17
6/28/2021	\$73.55	\$71.56	\$72.80
7/5/2021	\$73.13	\$71.02	\$72.16
7/12/2021	\$74.46	\$71.35	\$73.47
7/19/2021	\$73.02	\$68.70	\$70.34
7/26/2021	\$72.48	\$70.17	\$70.95
8/2/2021	\$74.23	\$71.30	\$72.59
Minimum		\$62.75	\$63.97
Maximum	\$77.95		\$77.26
Mean	\$72.58		\$72.77
Source: YahooFinance, Weekly Stock Prices			

Schedule AHG-6
21-BHCG-418-RTS

[illegible]

STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

VERIFICATION

Adam Gatewood, being duly sworn upon his oath deposes and states that he is a Senior Managing Financial Analyst for the Utilities Division of the Kansas Corporation Commission of the State of Kansas, that he has read and is familiar with the foregoing *Direct Testimony*, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.

/s/Adam H. Gatewood
Adam Gatewood
Senior Managing Financial Analyst
State Corporation Commission of the
State of Kansas

Subscribed and sworn to before me this 9th day of September, 2021.

Notary Public

My Appointment Expires: 4/28/25



NOTARY PUBLIC - State of Kansas
ANN M. MURPHY
My Appt. Expires 4/28/25

CERTIFICATE OF SERVICE

21-BHCG-418-RTS

I, the undersigned, certify that a true and correct copy of the above and foregoing Direct Testimony was served via electronic service this 10th day of September, 2021, to the following:

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CERTIFICATE OF SERVICE

21-BHCG-418-RTS

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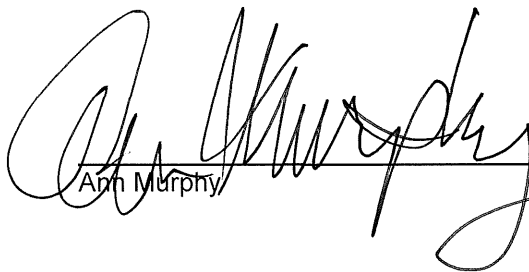
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